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VAN DIE REDAKSIE

ANURIE EN UREMIE

Kolff[1] wat 'n spesiale studie van die onderwerp, en veral van die moontlikhede van dialise gemaak het, bespreek die moderne benadering tot hierdie ernstige siekte in 'n onlangse verhandeling oor die oorsake en behandeling van akute nierversaking. Spesiale geriewe is dikwels nodig om die beste behandeling te voorsien, en pasiënte moet binne die eerste paar dae, voordat hulle ernstig siek word, na geskikte hospitale verplaas word.

In die behandeling van gevestigde anurie moet die hoeveelheid liggaamsvloeistof konstant gehou word deur vergoeding vir die onwaarneembare verlies van water, en vir die vloeistof wat verlore gaan weens braking, diarree of dreinering. Oor-hidrering van die pasiënt moet met die grootste versigtigheid vermy word want dit mag longedeem of stuiptrekkings veroorsaak. Behalwe die water wat ingeneem word, moet die oksidasie-water ook in gedagte gehou word; die meeste siektes wat anurie veroorsaak, veroorsaak ook 'n toename in die stofwisseling. Parentale toediening is nie nodig solank die pasiënt vloeistowwe kan drink nie, tensy 'n hipertoniese oplossing van dekstrose of fruktose gegee moet word. As oor-hidrering wel voorkom, is bloedlating die beste noodhulp om die bloedvolume te verminder; 300-500 ml. bloed kan afgetap word. Om edeem by urinelose pasiënte te verminder, word daar gebruik gemaak van hipertoniese soutpurgasies, verwydering van die buikwater, die kunsnier, of uitspoel van die buikholte.

In die akute fase van anurie moet natrium met die grootste versigtigheid toegedien word want dit kan nie uitgeskei word nie. Gedurende die urine-afdrywingsfase, wat gewoonlik uiteindelik voorkom by akute nierversaking, moet natriumchloried gegee word om vir die verlies daarvan in die urine te vergoed—3 g. natriumchloried teen elke liter urine wat uitgeskei word.[1] Dikwels word die kaliumstand van die bloed by akute urineloosheid te hoog, veral by verbryseling en by ernstige besmetting en vergiftiging, en hierdie hiperkalemie kan ten beste met 'n vlam-ligmeter, en minder bevredigend met elektrokardiogramme, gemeet word. Daar word met die toediening van katioon wisseling-

EDITORIAL

ANURIA AND URAEMIA

In a recent review of the causes and treatment of acute renal failure Kolff,[1] who has made a special study of the subject, particularly the possibilities of dialysis, discusses the modern approach to this serious condition. To provide the best treatment, specialized facilities are often required, and patients should be transported to appropriate centres during the first few days, before their condition has become grave.

In the treatment of established anuria, body fluid must be maintained by making good the insensible loss of water and the fluid lost by vomiting, diarrhoea, or drainage. Care is necessary to avoid over-hydrating the patient, which may produce pulmonary oedema or convulsions. Beside fluid intake, the water of oxidation must be borne in mind; most conditions that give rise to anuria also produce an increase in metabolism. As long as the patient can take fluids by the mouth, parenteral administration is not indicated, unless hypertonic dextrose or fructose is to be given. Should overhydration occur, venesection is the best immediate means of reducing the blood volume; 300–500 ml. of blood may be withdrawn. To reduce oedema in anuric patients use has been made of hypertonic saline purgatives, the removal of ascitic fluid, the artificial kidney, or peritoneal lavage.

In the acute phase of anuria the administration of sodium calls for great care, because it cannot be excreted. During the diuretic phase, which usually occurs eventually in acute renal failure, sodium chloride needs to be given to replace the urinary loss—3 g. of sodium chloride for each litre of urine excreted.[1] Hyperpotassaemia, which is best determined with the flame photometer, and less satisfactorily by means of electrocardiograms, often occurs during acute anuria, especially in crush injury and in severe infections and intoxications. Attempts to reduce the blood potassium are made by

harse (in die natriumsiklus), en met glukose, met of sonder insulien, gepoog om die bloedkaliumstand te verminder. Hipertoniese natriumbikarbonaat of kalsium glukonaat mag toegedien word, maar dialise met die kunsnier is die beproefde metode om hiperkalemie binne 'n paar uur te verbeter.[1] 'n Tekort aan bloedkalium, wat dieselfde kliniese simptome van spierverlamming en hartaantasting mag veroorsaak, kan in die diuretiese fase voorkom as baie urine uitgeskei word. In hierdie geval moet kalium toegedien word, maar dit moet nie in die vorm van binneaarse kaliumchloried gegee word nie—hierdie behandeling is gevaarlik en het al die dood veroorsaak. Te min kalsium in die bloed kom soms by akute nierversaking voor maar veroorsaak selde enige simptome; kalsium moet toegedien word as rukkramp wel voorkom, en ook wanneer suurvergiftiging behandel word.

'n Poging moet aangewend word om 'n dieet wat so ryk as moontlik aan kalorieë is te forseer. Dit is nie altyd 'n maklike taak nie, want die pasiënte moet nie te veel vloeistof kry nie, en baie van hulle kan ook nie veel eet of drink nie. Kolff[1] gebruik die kalorie-ryke, proteïen-arm dieet wat Borst (Amsterdam) aanbeveel het, en gee 'n paar resepte vir die voorberei van die voeding aan, met besonderhede aangaande toediening.

Die simptomatiese behandeling van hartversaking, hoë bloeddruk, longedeem, abnormale asemhaling, uremiese verskynsels en ander aspekte van die behandeling van akute nierversaking word breedvoerig bespreek. Hier kom die moderne middels soos chlorpromazine (braak-teenmiddel), middels wat die senuweeknope versper (bloeddrukverlagend),en nog baie ander ter sprake. Waar 'n opgeleide personeel en die nodige toestelle beskikbaar is (klein hospitale moet nie hierdie duur toestelle aankoop nie), kan die produkte van terughouding, en die sure van die stofwisseling, sowel as edeem, deur middel van dialise en deursyfering verwyder word. Dit is duidelik dat die metodes betrokke by die gebruik van die kunsnier, en die uitspoel van die buikholte en derm, in baie min inrigtings toegepas kan word.

1. Kolff, W. J. (1955): Med. Clin. N. Amer., **39**, 1041.

giving cation exchange resins (in the sodium cycle), and glucose with or without insulin. For temporary effect hypertonic sodium bicarbonate, or calcium gluconate, may be administered, but dialysis with the artificial kidney is the certain way to reduce hyperpotassaemia in a few hours.[1] Hypopotassaemia, which may cause the same clinical symptoms of muscular paralysis and cardiac arrest, may occur in the diuretic phase, when the urine volume is large, and in this condition potassium should be administered, but not in the form of patassium chloride given intravenously, which is dangerous, deaths having resulted from this treatment. Hypocalcaemia occurs frequently in acute renal failure, but seldom causes symptoms; however, if tetany occurs, and whenever acidosis is corrected, calcium should be administered.

An attempt should be made to force a diet as high in calories as possible. This is not always easy, since overloading with fluid is to be avoided and since many patients cannot take much by mouth. Kolff[1] uses the high-calorie low-protein regimen introduced by Borst (Amsterdam) and gives some recipes for the preparation of the recommended diet, and details for its administration.

The symptomatic treatment of cardiac failure, hypertension, pulmonary oedema, abnormal respiration, uraemic manifestations, and other aspects of the management of acute renal failure, are considered in detail; modern drugs have their place here, such as chlorpromazine (anti-emetic), ganglion-blocking agents (hypotensive), and many others. For those who have a trained team and the apparatus (small hospitals should not invest in the expensive equipment) the removal or retention products, acid metabolites and oedema can be achieved by dialysis and filtration. The techniques involved in the use of the artificial kidney, peritoneal lavage, and intestinal lavage can obviously be carried out in very few institutions.

1. Kolff, W. J. (1955): Med. Clin. N. Amer., **39**, 1041.

DIE ILIOSAKRALE GEWRIG: DIE ROL VERVUL IN DIE VROULIKE BEKKEN*

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Dit ly geen twyfel dat uit die arthrologiese standpunt beskou, die iliosakrale gewrig 'n toonaangewende rol speel, nie alleenlik wat betref die hegtheid van die bekkeneenheid nie, maar ook in die dinamiek van laasgenoemde.

Die bekkengordel is dinamies; nie alleenlik en by uitsondering tydens die aanslae van swangerskap en baring nie, maar ook onder die vereistes daaraan gestel deur gedurige en alledaagse spieraksie. Aangesien hierdie dinamiek voortspruit uit gewrigsbeweeglikheid, is die meganika van die iliosakrale gewrig van oorwegende belang, temeer aangesien enige sogenaamde symphyseale beweging normaalweg beheer word en afhanklik is van iliosakrale werking.

Daar bestaan blykbaar 'n opvatting dat die iliosakrale gewrig by uitstek 'n statiese en stabiele gewrig is. Terwyl dit nie betwyfel word dat dit *per se* een van die sterkste gewrigte in die menslike liggaam is nie, is dit nog nie 'n

* 'n Referaat gelewer tydens die Suid-Afrikaanse Mediese Kongres, Pretoria, Oktober 1955.

uitgemaakte saak dat dit, in ag geneem die vereistes daaraan gestel, puik doeltreffend is nie. Aangesien dit ontogeneties sowel as phylogeneties eers laat verskyn,[4] is dit uit die aard van die saak verplig om snelle morfologiese sowel as aanpassende veranderinge te maak. Gevolglik is hierdie gewrig besonder dinamies, en word hierdie eienskap bewaar deur al die dekades van 'n leeftyd.

PHYLOGENIE EN ONTOGENIE

By wyse van 'n anatomiese studie toon Ralph Brooke (1934)[1] dat die gewrig van 'n uiters primitiewe vorm soos gevind by sekere amphibia (*Anuria*), ontwikkel deur 'n diarthrodiese tipe (pronograde soogdiere, hoër ontwikkelde ape) tot 'n synchondrose en amphiarthrose in die middeljarige mens en uiteindelik by hoë ouderdom 'n synarthrose.

Embriologies gesproke kom die iliosakrale gewrig laat te voorskyn. Eers by die vyfde voorgeboortelike maand begin 'n mesenchymale kondensasie tussen die iliaciese en sakrale kraakbene; vorming in verskillende afsonderlike gedeeltes het nog nie eers begin nie, terwyl differensiasie in al die ander liggaamsgewrigte al goed gevestig is.[4]

Gedurende die foetale periode en tot tweejarige ouderdom groei die bekken baie aktief en vinnig.[8] Een van die sleutelpunte verantwoordelik vir die vergroting van die bekkenrand is die kraakbene van die teenoorgestelde oorvormige vlakke onderskeidelik aan die sakrum en iliaca.[8] Die gewrig bevind hom tussen hierdie groeipunte.

Die hele vormingsproses van die gewrig is dus intiem saamgesnoer met die ontwikkeling van die volwasse bekkenrand. Die kritieke tydperk waarin laasgenoemde tot finaliteit uitgebou word is die puberteitsjare.[8] Terwyl ons nog in die duister rondtas by gebrek aan genoegsame kennis van die presiese aard van die gewrigsontogenie in dié tyd, beskik ons nogtans oor feite wat 'n redelike veronderstelling stimuleer.

Indien 'n mens sou aanneem dat die twee groeipunte aan weerskante van die twee oorvormige vlakke ewe vinnig sou uitsit en dat die twee groeirigtings lynreg teenoor mekaar gestel sou wees, dan sou die volgende gevolgtrekkings geregverdig wees:

(*a*) Die druk van weerskante op die twee oorvormige vlakke is gelyk en reëlmatig versprei oor beide vlakke. Die twee vlakke behou hulle oorspronklike vorm.

(*b*) Aan beide kante van die gewrig is die uitsetting van die bene gelyk in rigting en mate, met behoud van die bene se vorm.

Stel u egter voor dat die twee opponerende groeipunte ewe vinnig groei, maar dat die twee groeirigtings met 'n redelike skerp hoek teenoor mekaar beweeg, dan sou die volgende argument water hou:

(*a*) Die druk op die twee oorvormige vlakke, alhoewel steeds gelykmatig, is meer gekonsentreer aan die kant van die hoek gevorm deur die aansluiting van die twee groeirigtings. In die geval van die iliosakrale gewrig dan, die voorkant en onderkant.

Ook is daar 'n neiging vir beide vlakke om te verskuif in die rigting van die resultant van die twee kragte. Die oorspronklike vorm van die twee oorvormige vlakke word dus gewysig en uitgestryk, maar die onderskeie oppervlaktes bly gelykmatig.

(*b*) Aan beide kante van die gewrig is die beenuitsetting gelyk in mate, maar die rigting is dieselfde as die groeirigtings. Die bene, indien ewe sterk, behou hul vorm.

Postuleer nou egter 'n derde moontlikheid, naamlik dat die een groeipunt vinniger en dus sterker groei; by name die groeipunt van die sakrale oorvormige vlak, en dat die twee groeirigtings met steeds dieselfde hoek teen elkander stuif, dan is dit op grond van die voorafgaande stellinge redelik om as volg te besluit:

(*a*) Die druk op die twee oorvormige vlakke is soos voorheen meer gekonsentreer aan die voor- en onderkant van die iliosakrale gewrig. Daar is 'n neiging vir beide vlakke om te verskuif in die rigting van die resultant van die twee groeikragte. Aangesien die groeikrag van die kruisbeen die sterkste is, is die resultant meer in die rigting van die crista iliaca as voorheen. As gevolg van die sterk druk uitgeoefen deur die voorrand van die sakrale vlak op die iliaciese vlak, is die groei van die been hier sodanig belemmer dat daar 'n ophoping van nuwe been is wat oor die sakrale rand kruip, en 'n skerp beenlys vorm, wat moontlik ook die pre-auriculêre sulcus verklaar.

Die oorspronklike vorm van die oorvormige vlakke ondergaan veranderinge wat nie noodwendig eenders is nie. Die wrywing op die twee oorvormige vlakke, asook die normale beweeglikheid van die groeiende kind, lei tot afskuring van been aan beide vlakke. Die sakrale vlak egter word gerugsteun deur 'n sterker groeikrag, en gevolglik is beenverplasing hier vinniger. Die iliaciese vlak daarenteen toon dus 'n meer ‚afgeskuurde' voorkoms. Ook word laasgenoemde se groeikrag meer geforseer in die rigting van die kragte-resultant, en dus ‚ontsnap' hierdie vlak meer in die rigting van die crista iliaca.

Die oppervlaktes van die verskeie vlakke word dus ongelyk; en as gevolg van die geforseerde groei van die iliaciese vlak in die rigting van die resultant, d.w.s. 'n plat, oppervlakte-groei, word dit verwag dat hierdie oorvormige vlak groter as sy teenvoeter sal wees.

(*b*) Die beenuitsetting aan beide kante van die gewrig is ongelyk. Die alae van die kruisbeen sal meer uitsit in 'n laterale rigting. Die stadiger groeiende iliaca is struktureel swakker as die sakrum om 'n sterk laterale krag te weerstaan en gevolglik sal die been buig en 'n kurwe vorm.

Hierdie is dan die stelling wat gemaak word om die finale ontogenetiese veranderinge in die gewrig te verklaar.

Heyns[9] het getoon dat die sakrum van die vrou wyer is as dié van die man. Dis nie duidelik op watter ontwikkelingsperiode die vroulike sakrum relatief wyer word as die manlike een nie, maar as daar in aanmerking geneem word dat die iliaciese kurwe teenaan die iliopectineale lyn alleenlik by puberteit ontwikkel, is dit op grond van bogenoemde stelling duidelik dat die sakrale groeipunt sterker is as sy opponent, en wel by puberteit. As die vroulike iliaciese oorvormige vlak dan as gevolg hiervan relatief meer in die rigting van die crista iliaca verskuif, verklaar dit waarom die vroulike kruisbeen meer na agter leun, en die mees konstante vroulike geslagseienskap van die bekken vorm.

Die gedwarsboomde groei met die gevolglike beenlys aan die voor- en onderkant van die iliaciese oorvormige vlak verleen meer helderheid aan Heyns[8] se bewering dat hierdie vlak aan die bo- en agterkant relatief meer groei.

Hierdie beenlys kom baie konstant voor by die gewrigte van Bantoe vroue. Hierdie gewrigte geneem uit die Dart-skeletversameling, is ondersoek by die Departement Anatomie, Universiteit van die Witwatersrand. Met behulp van 'n millimeterskroeftoestel spesiaal vir die doel ontwikkel in die Departement, Anatomie is sekuur dwarssnit-tekeninge op 3 verskillende hoogtes deur elk van 6 gewrigte gemaak. Die lys is duidelik aan die voor- en onderkant van die iliaciese oorvormige vlak sigbaar.

Dioptografiese tekeninge is gemaak van beide oorvormige vlakke van 36 Bantoe vroulike gewrigte. Morfologiese studie toon dat hierdie vlakke in 3 hoofgroepe verdeel kan word, naamlik L-vormig, sekelvormig en eiervormig. Binne elke groep is daar 'n groot verskeidenheid van vorms wat egter nie in aanmerking geneem is nie.

Die volgende afleidings kan gemaak word:

(*a*) By 1 uit 18 bekkens is teenoorgestelde vlakke by albei gewrigte nie eenvormig, of uit een groep nie, d.w.s. 5·5%.

(*b*) By 5 uit 18 bekkens is teenoorgestelde vlakke by een van die twee gewrigte nie uit 1 groep nie, d.w.s. 27·7%.

(*c*) Waar beide vlakke van een gewrig eenvormig is, is by 7 uit 18 bekkens die twee gewrigte uit verskillende groepe, d.w.s. 38·8%.

(*d*) Alleenlik by 44·4% van die bekkens (8 uit 18) is beide gewrigte eenvormig, en kom die teenoorgestelde vlakke van elke gewrig ook ooreen.

(*e*) Uit 36 iliaciese oorvormige vlakke is 18 of 50% L-vormig, 13 of 36·1% is sekelvormig, en 5 of 13·9% is eiervormig.

(*f*) Uit 36 kruisbeenvlakke is 17 of 47·2% L-vormig, 12 of 33·3% is sekelvormig, en 19·5% is eiervormig.

Die morfologiese onplanmatigheid van die iliosakrale gewrig, wat seker nie deur enige ander liggaamsgewrig geëwenaar word nie, toon dat dit binne breë perke nie 'n konstante argitektoniese struktuur handhaaf nie, en in werklikheid besonder dinamies is.

Met behulp van 'n planimeter is oppervlakteberekeninge gemaak van die dioptografiese tekeninge van die verskeie oorvormige vlakke. Die volgende bevindings is gemaak:

(*a*) Uit 'n totaal van 36 gewrigte is 25 iliaciese oorvormige vlakke groter as die sakrale vlakke (69·4%); 2 iliaciese en sakrale vlakke is ewe groot (5·5%); en 9 sakrale vlakke is groter as die teenoorgestelde iliaciese vlak (25%).

(*b*) Waar die iliaciese vlakke die grootste is, is hulle gemiddeld 0·66 vierkante cm. groter as hul opponente. Waar die teenoorgestelde waar is, is die kruisbeenvlakke egter gemiddeld 0·75 vierkante cm. groter as die iliaciese vlak.

(*c*) Die totale oppervlakte van al die iliaciese oorvormige vlakke is 409·5 vierkante cm. en is groter as die totaal van die kruisbeenvlakke wat 401·3 vierkante cm. is.

(*d*) Die gemiddelde oppervlakte van al die iliaciese oorvormige vlakke is 11·38 cm.^{2} en van die sakrale vlakke 11·18 cm.^{2}

Gemiddeld dus, is die iliaciese oorvormige vlakke 0·2 cm.^{2} groter as die kruisbeenvlakke.

Die resultate van beide die morfologiese sowel as die planimetriese ondersoek, gee dus betekenisvolle steun aan die bewering dat as gevolg van die besondere ontogenetiese ontwikkeling van die gewrig, die teenoorgestelde oorvormige vlakke nie noodwendig dieselfde vorm moet hou nie; en ook dat die iliaciese vlak heel waarskynlik groter as sy opponerende vlak sal wees.

MEGANIKA

By gedurige aanslag beweeg die gewrig onder die eise daaraan gestel deur die eienskap eie aan die mens—die regop houding. Hierdie beweeglikheid word algemeen beskou as 2 aparte bewegings wat plaasvind, nl. 'n vertikale gly-beweging en 'n swaai-beweging van die kruisbeen op die twee heupbene.[3, 5, 6, 7, 14, 16, 17] Verantwoordelikheid vir hierdie bewegings word toegeskryf aan die liggaamsgewig en skielike gewigspanninge waaraan die gewrig onderhewig is. Direkte spieraksie sou dan geen uitwerking hê op normale beweeglikheid by die gewrig nie.

By beide proefondervindelike asook anatomiese ondersoek blyk dit egter dat daar behalwe bogenoemde twee bewegings, 'n derde beweging by die gewrig plaasvind. Hierdie beweging is 'n gaping van die gewrig aan die voorkant, en vind plaas deurdat die iliaca aan beide kante wegswaai van die sakrum in 'n laterale of dwars rigting.

Dit word teweeggebring alleenlik deur direkte inwerking van spierkrag uitgeoefen op die gewrig, in teenstelling met die ander bewegings veroorsaak deur passiewe aanpassing by gewigsverskuiwinge.

Dit word geredelik toegegee dat by die normale nie-swanger vrou hierdie beweging minimaal en selfs byna potensieel is. By swangerskap egter tree die derde beweging onmiddellik op die voorgrond, en nog meer, in 'n oorheersende hoedanigheid. Hierdie beweging is dan die basiese en primêre oorsaak van die konstante fisiologiese symphyseale verwyding wat plaasvind tydens swangerskap.

Bogenoemde bewerings vereis verklaring en stawing.

ANATOMIESE OORWEGINGE

Sonder om te diep te delf in anatomiese besonderhede, is dit voldoende om daarop te wys dat die spiere wat die iliosakrale gewrig van agter ondersteun, van die kragtigste in die menslike liggaam is; by name Sacrospinalis, Multifidus en Quadratus lumborum. Hierdie sterk rugspiere word deur hulle lang aanhegting aan die rugstring in staat gestel om 'n geweldige krag uit te oefen op die crista iliaca, waar hulle hulle oorsprong het, en wel ook in 'n *mediale rigting*.

Hierdie mediale krag, indien uitgeoefen, moet gaan oor 'n steunpunt geleë op die oorvormige vlak van die kruisbeen, en moet tot gevolg hê die derde dwarsbeweging van die gewrig. Die beweging wat die gewrig self betref,

kan alleenlik teëgestaan word deur 2 relatief swak postuur-spiere; Piriformis en Iliacus, en deur die voorste iliosakrale ligament, en tot 'n geringe mate deur die voorste hulp-ligamente van die gewrig.

By ondersoek van 42 gewrigte is hierdie steunpunt konstant gevind, en is dit geleë aan die heel agterste rand van die sakrale oorvormige vlak. Onmiddellik regoor is daar aan die iliaciese vlak 'n klein groefie of holte wat in mindere of meerdere mate by al die gewrigte voorkom. By die dwarssnit-tekeninge van die gewrig word hierdie steunpunt gedemonstreer.

Gedurende swangerskap, as gevolg van die besondere ontspannende invloed van die hormoon Relaxin op bindweefsel,[1, 11, 12, 16] vind daar dan 'n verslapping plaas nie alleenlik van alle gewrigsligamente nie, maar ook van die spiere deur middel van hulle aponeurotiese en ander aanhegsels.

Die gevolglike verandering in spiertonus tesame met die veranderende gewigswaartepunt as gevolg van die groeiende baarmoeder en die vermeerderde lordose lei tot outomatiese gedurige sametrekking van die lang rugekstensors. Hierdie sametrekking is dan ook 'n krag uitgeoefen in 'n mediale rigting op die crista iliaca.

Tegelykertyd word die gaap-beweging van die gewrig aansienlik bevorder deur (1) die meer intensiewe uitwerking van Relaxin op die relatief dun anterieure iliosakrale ligamente in vergelyking met hulle massiewe seningagtige agterste opponente en (2) die symphyseale verslapping wat ook plaasvind.

Deur die gebrek aan weerstand by die symphyse kan die pubis dan 'n laterale beweging beskryf wat direk in verhouding tot sy distansie van die sakrale steunpunt vergroot is ten opsigte van die kleiner gewrigsbeweging.

Vandaar dan die symphyseale verwyding gedurende swangerskap. Eers as hierdie beweging plaasvind is die omstandighede gunstig vir die swaaibeweging en glybeweging wat James Young[16] en andere,[3] as belangrik in hierdie verband beskou.

PROEFONDERVINDELIKE GETUIENIS

Ten einde vas te stel of (1) die crista iliaca aan weerskante wel nader na mekaar beweeg as gevolg van mediale rugspieraksie en (2) of die pubiese bene verder uitmekaar beweeg weens hierdie aksie, is 'n reeks roentgenstraalondersoeke gedoen.

Hierdie onvoltooide eksperimentele ondersoek is nog steeds aan die gang, maar die voorlopige resultate is alreeds bevestigend, en word aangegee in Tabel I.

Die metode wat gevolg word is as volg:

Geskikte vroue wat so pas gekraam het, en by wie die Relaxin-inhoud van die bloed dus nog hoog is,[1, 11] is gebruik, asook nie-swanger nulliparae as kontroles.

Twee X-foto's is geneem van elke vrou en wel op die volgende wyse:

Foto I. Die vrou lê plat op haar rug op 'n X-straal tafel. Die dybene is effe gelig sodat die crista iliaca (wat vooraf gemerk is) plat op die tafel rus. Die distansie van die symphyse na die tafel word gemeet. Die distansie van die tafel na die plaat is bekend. 'n Gewone A-P foto van die bekken word geneem met die buis op 'n vaste distansie van 120 cm. van die film. 'n Potter-Bucky diafragma word gebruik.

Foto II. Die vrou lê op die tafel in 'n posisie van aktiewe hyperekstensie of opisthotonus. Alleenlik die hakskene en skouers rus op die tafel, en die bekken word so hoog moontlik bokant die tafel gestoot deur *direkte spieraksie* van die lang rugekstensors. Sy word vir 'n oomblik in hierdie posisie gesteun terwyl die nodige mate geneem word. (Dit is nogal verbasend om te sien hoe maklik hierdie posisie vir die nodige tydperk gehandhaaf word.) Die distansie van die symphyse na die tafel, asook van die crista iliaca na die tafel, word gemeet, en met die buis nog steeds 120 cm. van die film, word weer 'n A-P foto van die bekken geneem.

Na ontwikkeling word op beide films die volgende distansies suiwer gemeet met behulp van meetkundige tweebeen-passers en gesertifiseerde metriese maatstokke.

1. Die afstand tussen die pubiese bene op ooreenkomstige hoogtes, d.w.s. die wydte van die symphyse.
2. Die afstand tussen die crista iliaca op die hoogte van die kruisbeen-alae. Waar die skadu van die ala die crista kruis is 'n doeltreffende konstante landmerk, en ook dui dit die plek aan waar die crista op die tafel rus.

Die lesings verkry op elke film word nou korrigeer volgens eenvoudige meetkundige beginsels,[10] en die werklike afstande tussen die verskeie bene word verkry.

TABEL I. RESULTATE VERKRY VAN ROENTGENOLOGIESE ONDERSOEK

Tipe geval ondersoek	*Aantal*	*Gemiddelde beweging by crista iliaca*	*Gemiddelde beweging by symphyse*	*Gemiddelde wydte by symphyse*
Post partum ..	11	3·65 mm.	1·19 mm.	6·55 mm.
Kontrole ..	7	3·13 mm.	0·18 mm.	4·08 mm.

TABEL II. ROENTGENOLOGIESE RESULTATE IN PRIMIPARAE EN MULTIPARAE

Pariteit	*Aantal*	*Gemiddelde wydte by symphyse*	*Gemiddelde beweging by symphyse*
Primiparae	6	5·85 mm.	0·77 mm.
Multiparae	5	6·6 mm.	1·69 mm.

Alhoewel die reeks ondersoeke tot dusver baie klein is, toon die resultate reeds sekere neigings, en die volgende gevolgtrekkings word gemaak:

1. Die bevindings van Roberts,[13] naamlik dat die symphyse wyer word met ongeveer 2·5 mm. in die geval van multiparae (wat ongeveer 50% meer is as by primiparae) gedurende swangerskap, word gestaaf (Tabel I).
2. As gevolg van direkte spieraksie is daar:
   (*a*) 'n Mediale beweging van die crista iliaca, en 'n gevolglike gaap-beweging by die iliosakrale gewrig.
   (*b*) 'n Verdere verwyding van die symphyse by resente swanger vroue. Hierdie addisionele verwyding is ±50% meer by multiparae as by primiparae (Tabel II).
3. Daar is 'n minimale verwyding by die symphyse in nie-swanger vroue, alhoewel daar 'n beweging in die iliosakrale gewrig plaasvind aangesien die crista iliaca by hierdie vroue konstant na mekaar beweeg tot 'n effens geringer mate as by swanger vroue (Tabel I).

Laasgenoemde feit kom vreemd voor totdat besef word dat die iliosakrale gewrig normaalweg nie geslote is nie, en dat daar eers 'n kompressie-beweging in die lewende gewrig self moet voorkom voordat die sakrale

steunpunt in staat is om sonder om mee te gee die krag van die spierhefboom vanaf die crista iliaca te weerstaan. Hierdie preliminêre kompressie-beweging sluit in die vasdruk van die hyaline kraakbeen asook interdigitasie van projeksies en groewe, indien enige, in die gewrig self.

Laas genoemde speling in die gewrig kan matematies vasgestel word. Gestel die projeksie van die distansie van die symphyse na die iliosakrale gewrig is a, en die projeksie vanaf die iliosakrale gewrig na die crista iliaca is b. Die beweging by die symphyse (totale beweging) is p en die beweging tussen die crista iliaca is q.

Die verhouding $\frac{a}{b} = \frac{p}{q}$

Veronderstel die verhouding $\frac{a}{b} = \frac{3}{1}$ (soos dit min of meer is).

Dan is $\frac{3}{1} = \frac{p}{q}$

Veronderstel dat die speling by die gewrigte x is. Dan word die verhouding $\frac{a}{b}$ tot $\frac{p}{q}$ voorgestel deur die volgende formule:

$$\frac{a}{b} = \frac{p}{q - \frac{x(a+b)}{a}}$$

Vervang nou p en q met die werklike gemiddelde resultate verkry by swanger vroue, en die volgende som kan uitgewerk word:

$$\frac{3}{1} = \frac{1{\cdot}2}{3{\cdot}6 - x\frac{(3+1)}{3}}$$

$$= \frac{1{\cdot}2 \times 3}{10{\cdot}8 - 4x}$$

$$3 = \frac{3{\cdot}6}{10{\cdot}8 - 4x}$$

$$10{\cdot}8 - 4x = \frac{3{\cdot}6}{3}$$

$$4x = 10{\cdot}8 - 1{\cdot}2$$

$$x = 2{\cdot}4 \text{ mm.}$$

x is egter die beweging by beide gewrigte; dus is die speling by swanger vroue in elke gewrig 1·2 mm.

Indien die symphyse geen weerstand bied nie, is die speling natuurlik minder aangesien minder kompressie uitgeoefen moet word op die gewrig en andersom.

In verband met die spieraksie wat die gaap-beweging van die iliosakrale gewrig voorafgaan, nog net dit:

Die rugspiere is in aksie by ekstensie. Maar ook by fleksie van die romp span hierdie spiere styf, en indien fleksie gepaard gaan met inspanning van die rugspiere, soos by die optel van 'n swaar gewig, of soos gedoen word by trek aan die knieë, bv. by afdrukpogings in die tweede stadium van baring, dan word daar ook krag in 'n mediale rigting op die crista iliaca uitgeoefen, wat dan weer hierdie iliosakrale beweging met die gevolglike symphyseale verwyding tot gevolg het.

Bogenoemde baie algemene aksie by die tweede stadium van kraam verklaar dan die tot dusver geheimsinninge separasie wat soms as 'n patologiese verskynsel voorkom na kraam.

Met enkele uitsonderings[2, 15] is daar eenstemmigheid by ondersoekers[1, 13, 16] na die verskynsel dat dit blykbaar geen verband hou met die duur van baring, 'n groot foetale kop of 'n relatief nou bekken nie. Inteendeel dit kom soms voor by 'n maklike vroeggeboorte.

Roentgenstraal-ondersoeke word op die oomblik gedoen in posisies van fleksiespanning om bogenoemde stelling te probeer bewys.

GEVOLGTREKKINGE

1. Dit wil voorkom asof die iliosakrale gewrig, gedurende die ontwikkelingsperiode, nie alleenlik intiem betrokke is nie maar ook verantwoordelik is vir die mees konstante geslagseienskap van die vroulike bekken, naamlik die meer horisontale inklinasie van die kruisbeen.

2. Direkte spierwerking veroorsaak 'n beweging by die iliosakrale gewrig wat grotendeels verantwoordelik is vir die algemene symphyseale verwyding wat plaasvind gedurende swangerskap. As gevolg van die aard van hierdie spieraksie, is geweldige afdrukpogings van die kant van die moeder nie aan te beveel tydens kraam nie. Hierdie geweld kan as gevolg hê 'n patologiese loslating van die symphysis pubis.

SUMMARY

1. An explanation is given for certain anatomical findings in the female pelvis. This correlates pelvic sex-differentiation with the ontogeny of the sacro-iliac joint ontogeny. Anatomical and morphological studies were made, the results of which support the theory postulated.

2. An additional movement of the sacro-iliac joint is described. X-ray and anatomical studies show how this movement results in separation of the symphysis pubis during pregnancy and labour.

Hierdie artikel is geskryf met die vriendelike vergunning van professor O. S. Heyns. Ek wil hom bedank vir die gedurige inspirasie en aanmoediging wat hy verleen het tydens die voorbereiding daarvan.

My dank ook aan professor R. A. Dart van die Departement Anatomie. Tesame met sy personeel het hy alle moontlike hulp verleen, en my vrye toegang tot al die fasiliteite van sy departement gegee.

Ook wil ek dr. L. G. R. van Dongen en die Departement Radiologie by die Queen Victoria-hospitaal bedank vir toestemming en hulp verleen by die roentgenologiese ondersoek van pasiënte aldaar.

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SKIMMED MILK AND KWASHIORKOR

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An investigation to determine the precise factors in skimmed milk which are responsible for initiating the cure of kwashiorkor has been reported elsewhere.[4] As part of this investigation a series of cases were treated with skimmed milk, some with and some without a vitamin supplement. It was shown that the vitamin supplement made no significant difference to the rate of cure. In a limited number of cases an imported dried skimmed milk appeared to be superior to the locally-made product.

To clarify this observation a larger number of cases has now been brought into each series. In addition a further group has been treated with fresh skimmed milk containing a protein and vitamin supplement.

In this communication we refer to the relative effectiveness of these 4 skimmed-milk formulae in the initiation of cure of this syndrome.

Case Material and Methods. Criteria of selection and methods were identical to those described previously.[4] The composition of the test feeds is shown in Table I.

TABLE I. COMPOSITION AND CODE NUMBERS OF TEST FORMULAE

SADM. South African dried skimmed milk (roller dried) with no vitamin supplement.

SADM+VS. The same South African dried skimmed milk with daily vitamin supplement of:

Thiamine	4-6 mg.
Nicotinic acid	30-45 mg.
Riboflavine	3·4-4·4 mg.
Pyridoxine	4 micrograms
Calcium pantothenate	0·25-1 mg.
Vitamin B_{12}	6 micrograms
Vitamin A	6,000 units
Vitamin D	1,600 units
Ascorbic acid	80-105 mg.
Folic acid	5 mg.

In Pretoria 1½ minims of 85% lactic acid per fl. oz. was added to these skimmed-milk mixtures.

Imported milk. Imported spray-dried skimmed lactic-acid milk with total acidity of 5% and without vitamin supplement.

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Pretoria routine treatment

1. *Formula*

Fresh skimmed milk	2½ oz/lb/24 hours (usually 40-50 oz.)
Dextrimaltose	5% (usually 2-2½oz.)
Calcium caseinate	2½% (usually 1-1¼ oz.)
Lactic acid 85%, 1½ minim per oz. of milk.	

2. *Liver extract:* 1 ml. intramuscularly daily for the first 7 days and from then onwards 1 ml. 3 times weekly.

3. *Lipotropic factors:* The patients received daily a supplement containing:

Liver concentrate	300 mg.
Choline chloride	0·8 g.
Methionine d.l	0·68 g.
Inositol	0·5 g.

4. *Vitamin supplement:* This was given from the beginning of the 2nd week onwards and in the following daily quantity.

Vitamin A	9,000 units
Vitamin D	2,400 units
Thiamine	4·5 mg.
Riboflavine	3·6 mg.
Ascorbic acid	120 mg.
Nicotinamide	30 mg.
Vitamin B_{12}	15 micrograms
Folic acid	5 mg.

5. Ward diet was introduced gradually from the beginning of the 2nd week. If indicated 2 gr. of ferrous sulphate *t.i.d.* was prescribed at this stage.

During the first 12-24 hours all cases received an electrolyte solution such as Darrow's or Hartman's for correction of dehydration and to serve as a period of observation before the milk formulae were introduced. The two brands of dried milk were prepared to provide 5-10 calories per fl. oz. The fluid intake prescribed was approximately 2½ oz. per lb. per 24 hrs. With improvement of appetite the strength of the feed was increased to 15 calories per fl. oz. (1½ oz. dried milk per 10 oz. of water) and total fluid intake adjusted to the infant's demand. The fresh skimmed-milk mixture provided approximately 18 calories per fl. oz. It was rarely necessary to dilute this mixture as it was well tolerated in full strength. Procaine penicillin, 300,000 units daily by intramuscular injection, and oral sulphadiazine, 1½ gr. per lb. body-weight daily, was administered to all cases for at least a week.

Criteria of cure. The results are concerned with initiation of cure only, as previously defined.[4] In summary it can be said to have taken place when the previously downhill course of the disease has been changed into an upward one, usually within a period of 12-24 days. By this time the skin lesions are healing and the patient has lost his oedema and he has become interested in his surroundings and regained his appetite. Objectively the serum albumin will have shown a rapid rise. At this stage cure can be said to have been initiated and the therapeutic tests end. The introduction of mixed feeds is now necessary to satisfy appetite, to promote growth and development, and to consolidate cure.

RESULTS

The results have been arranged as follows:

Group 1 are the cases in which no treatment was given other than that laid down as a standard for all, and in which cure was fully initiated within 21 days.

Group 2 are cases in which the same end-result was achieved only with the aid of additional antibiotic therapy in the form of terramycin, aureomycin or chloramphenicol.

Group 3 are cases in which additional supportive transfusion of plasma or blood was necessary to initiate cure.

Group 4 are the deaths, including those occurring within 48 hours.

In Table II the results have been set out according to the above grouping. To overcome the variables of supportive treatment and to facilitate statistical analysis a simplified form of grouping has been adopted for the cases treated in Pretoria (Table III). In this all cases not classed as a group-1 cure have been regarded as failures. In this way it is possible to examine the ability of a formula to initiate cure in the absence of any supportive treatment other than penicillin and sulphadiazine.

TABLE II. DETAILED ANALYSIS OF RESULTS

Formula	*Centre*	*No. of cases*	*Group* 1	*Group* 2	*Group* 3	*Group* 4	
						Total	48-*hour deaths excluded*
SADM+VS (Skimmed milk with vitamin supplement)	Pretoria	42	28	2	8	4	2
	Cape Town	7	3	2	1	1	1
	Total	49	31 (63%)	4	9	5	3
SADM (skimmed milk without vitamin supplement)	Pretoria	40	23	0	9	8	5
	Cape Town	12	2	4	2	4	2
	Total	52	25 (48%)	4	11	12	7
Borden's skimmed lactic-acid milk	Pretoria	24	22	0	0	2	2
	Cape Town	10	8	1	0	1	0
	Total	34	30 (88%)	1	0	3	2
Pretoria routine treatment	Pretoria	41	27	2	5	7	4
	Total	41	27 (66%)	2	5	7	4

TABLE III. STATISTICAL ANALYSIS OF RESULTS FROM PRETORIA

Formula	*Group* 1	*Groups* 2, 3, 4 *Total* (*Failure*)	
SADM+VS (skimmed milk with vitamin supplement)	28 (69%)	14	42
SADM (skimmed milk without vitamin supplement)	23 (57·5%)	17	40
Borden's skimmed lactic-acid milk	22 (92%)	2	24
Pretoria routine treatment	27 (66%)	14	41

Analysis by X^2

SADM+VS/SADM/Borden's/Pretoria routine $0{\cdot}05>P>0{\cdot}02$ Significant

SADM+VS/SADM/Pretoria routine $0{\cdot}7>P>0{\cdot}5$ Not significant.

SADM+VS/Borden's $0{\cdot}05>P>0{\cdot}02$ Significant.

Using the same grouping for the combined results of the two centres the significant tests are:

SADM+VS/SADM/Borden's $P>0{\cdot}01$ Significant

SADM+VS/SADM $0{\cdot}2>P>0{\cdot}1$ Not significant.

From the data it can be seen that satisfactory initiation of cure was achieved with all the 4 formulae used. The imported skimmed lactic-acid milk without any supplementation gave significantly better results (88% cure for the whole series, 92% cure for the Pretoria cases) than the other 3 formulae, which were made up with South African skimmed milk (see bottom of Table III for X^2 analysis).

The differences in cure rate between these latter 3 formulae proved to be not significant. This confirms our previous findings[4] that the addition of vitamins to a basic milk-formula does not significantly improve the cure rate. The same may now be said for the addition of a casein, dextrimaltose and vitamin supplement (the Pretoria routine treatment.)

The rate of rise of serum albumin in the series treated with the imported skimmed lactic-acid milk is shown in Fig. 1 and compared with that previously obtained with the South African skimmed-milk formulae.[4] There is no significant difference in the steepness of the regres-

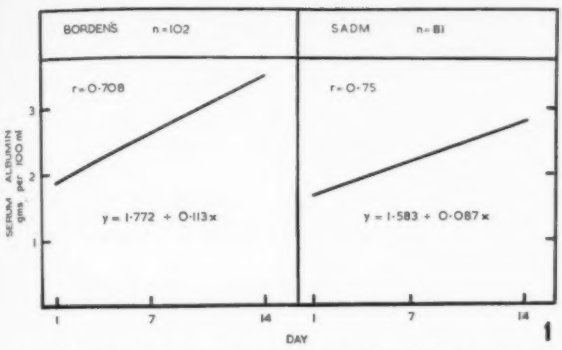

Fig. 1. Regression lines of rise of serum-albumin (Y) against time (X) during treatment with imported spray-dried acidified skimmed milk and South African skimmed milk (roller dried).

sion slope obtained with the two types of formula. Thus although clinically the cases on the proprietary formula did better the rate of recovery as judged by return of serum albumin to normal levels was in no way different.

DISCUSSION

The introduction of skimmed milk in the treatment of kwashiorkor has been a considerable therapeutic advance.[1, 3, 15, 16] It is now generally regarded as the dietary therapy of choice in this syndrome. There is, on the other hand, some divergence of opinion on whether the addition of vitamin or protein supplements is desirable.[5, 6, 7, 8, 10, 11, 12, 14, 15, 16]

Our results here confirm previous observations by ourselves and others that a vitamin supplement does not significantly alter the rate of initiation of cure. A similar conclusion can now be drawn about the addition of protein to a basic skimmed-milk formula. These findings are based on the use of both fresh skimmed milk and locally produced dried preparations.

The superior results achieved with an unsupplemented imported brand of skimmed milk were unexpected and require fuller investigation. There are several possible explanations. The local dried milk was manufactured by the roller process. The imported variety is spray-dried, and this is generally considered to be a preferable method, expecially from the point of view of preservation of amino acids.[13a,13b] Packaging and storage of dried milk is of great importance. It has been shown that heat and humidity cause rapid deterioration of dried milk due to the so-called Maillard reaction.[9] In this reaction lysine and possibly some other amino acids become inactivated. The South African skimmed milk was supplied in bags that were not entirely impervious to moisture and it is possible that some change of this nature took place. On the other hand the imported milk was supplied in air-proof and moisture-proof containers. Lactic acid was added during manufacture of the imported milk whereas with the local dried milk lactic acid was added during preparation of feeds.

The form of testing employed in this investigation, i.e. a therapeutic trial, has its limitations in a syndrome such as kwashiorkor unless very large numbers of cases are employed. Response to treatment must depend on severity of illness. We have found it extremely difficult to establish definite criteria of severity and cannot fully exclude the possibility that the cases on the imported milk were in some indefinable way less severe than the other groups. Over half the cases on this milk were treated during the winter months of July and August—a period when gastro-enteritis is not a problem. This in itself may account for the better performance. On the other hand, with this preparation results were uniformly good in all centres, each case satisfied criteria of diagnosis, and objectively there was no difference in the degree of hypo-albuminaemia on admission. It is desirable that a larger number of cases be studied to confirm or disprove our findings.

An immediate practical implication is that high standards of preparation, packaging and storage are obligatory if widespread distribution of skimmed milk is to be fully effective in the prevention and cure of kwashiorkor.

SUMMARY

A dietary therapeutic trial of skimmed milk in cases of kwashiorkor is described. Skimmed milk is confirmed as being probably the best treatment for kwashiorkor. Vitamin or protein supplements added to skimmed milk do not increase its efficiency in the initiation of cure. High standards of preparation and packaging of dried-milk products appear to be of more importance as judged by superior results obtained with an imported brand of dried skimmed milk.

OPSOMMING

'n Ondersoek waar gepoog is om die terapeutiese invloed van afgeroomde melk op die genesing van pasiënte met kwashiorkor vas te stel is beskryf. Daar is bevestig dat afgeroomde melk waarskynlik die beste voeding vir gevalle van kwashiorkor is. Byvoeging van vitamiene of proteïene by afgeroomde melk het nie die doeltreffendheid daarvan om die aanvang van genesing te bewerkstellig verhoog nie. Dit kom voor of hoë standaarde vir die vervaardiging en verpakking van melkpoeiers van meer belang is as daar gelet word op die beter resultate wat met die ingevoerde melkpoeier verkry is.

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THE REHABILITATION OF THE DEAF*

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When we are discussing the rehabilitation of the deaf we may well ask for a definition of the term deafness. To the doctor deafness means a particular pathological condition of a particular part of the human body resulting in inertness of either that particular organ or of organs depending on it for its functioning. Amongst the public there is still a strong tendency to regard deafness as a sure sign of mental infirmity and the deaf and hard-of-hearing person as being just a nuisance. To the patient the problem means something radically different. To him it is a cause of utter isolation from his fellow men and from society. It means an inability to live a full life as a human being and a basic inability to grasp and understand the society in which he moves, and of which he is a part. The effect of deafness on the sufferer, therefore, is to exclude him from the society in which he has to live, resulting in varied educational, psychological and sociological problems.

Hardness-of-hearing is, of course, a lesser handicap, but again a condition presenting its own peculiar problems.

The South African National Council for the Deaf includes under the term 'deaf' all auditory defects—the totally deaf as well as the hard-of-hearing. That will be the interpretation of the term in this address.

When, therefore, a medical practitioner has to do with the problem of deafness it is as imperative for him to consider what sort of patient has the disease as what sort of disease the patient has. The disease is not merely a pathological condition of a particular organ. It is part and parcel of the human individual, of his total personality. The human being is not an abstract individual totally independent of other beings. The human individual is a social being and it is impossible to consider him without reference to his social relationship and contacts. An inevitable chain of cause and effect between individual and society is ever present. For that reason the medical practitioner, when treating an ear disease, must bear this chain in mind and must appreciate that his patient has social connections which are of vital importance in the treatment of the disease, and in its effects.

The effects of deafness on the individual are seldom realized. The blind and the cripple will always elicit sympathy and consideration from those with whom they come into contact. The deaf, however, often receive no consideration even in the medical world. When the world-known deaf-blind authoress, Helen Keller, was asked, if she could have one of her senses back, which one she would prefer, her reply was, 'Undoubtedly my hearing, as it is my deafness more than my blindness that stands as a wall between me and my fellow men.'

INCIDENCE

It is not always appreciated how high the incidence of deafness really is. Few reliable statistics are available but on a conservative estimate it appears that the incidence rate of hearing defects in the various categories per 1,000 population is as follows: Grade I 18·5, grade IIA 3·3, grade IIB 1·8, grade III 1·3. This gives a total incidence rate for defects of hearing of 24·9 per 1,000. From the census figures of 1946 it is therefore calculated that there are 59,079 Europeans in South Africa suffering from a defect of hearing, of which 2443 are completely deaf. This is a higher incidence rate than that of any other physical disability.

For the incidence amongst the non-European practically no figures are available. During 1951, however, Dr. P. S. Meyrick conducted a survey of the incidence of diseases of the ear, nose and throat in a remote Native reserve. He obtained the following figures for conditons of the ears: Wax in the ears, 80; Retracted ear drums, 146; Chronic suppurative otitis media, 139; Normal, 334. These conditions must bring about at least a temporary hearing loss, and if not treated early and efficiently will result in permanent deafness, with an incidence rate round about 400 per 1,000.

This alarmingly high incidence of hearing defects and

* An address delivered at the South African Medical Congress, Pretoria, October 1955.

ear diseases must receive serious consideration. It is not my duty on this occasion to lecture on the causes of deafness, but I regard it as imperative to emphasize the social causative factors, in order to indicate the necessity of a wider attack on this problem than by the medical profession only, and to stress the basic role of the social worker in the treatment of ear diseases and the prevention of deafness.

In the survey mentioned Dr. Meyrick came to the conclusion that the nutrition of the people was poor generally, and very markedly so in the children, and that the high incidence of chronic discharging ears was directly associated with the nutritional state.

Prof. J. A. Ryle in a lecture in 1948 said: 'All diseases of prevalence may in fact be considered as social diseases. They are in the final analysis due largely to social causes. They wax and wane and change in type with changes in social conditions. They prove or will prove to be partly and sometimes wholly controllable not so much by medicine and hospital as by social planning and readjustments.'

Another important aspect is that the medical practitioner can do nothing if the patient is not brought to see him. The early symptoms of certain ear diseases are so common that nobody really worries about them, and they are not regarded in any serious light. It is therefore found that children are running about with continuous and recurring earache, and with chronic discharging ears, and are never brought to see a doctor. In this field of the prevention of deafness the South African National Council for the Deaf has undertaken very important projects. Some years ago the Council had a van touring through South Africa showing films on the treatment of the ear and the prevention of deafness, distributing leaflets and displaying posters to draw the attention of the public to the elementary symptoms, and inducing them not to neglect ear disease, but to consult their doctors. The Council has lately appointed a subcommittee to draw up a programme for health education and the prevention of deafness. Eighteen months ago a conference was held in East London on the Prevention of Deafness and good progress has since been made. It is anticipated that in the near future the Council will be able to tackle this matter in a more forceful way. The survey that I have referred to was undertaken under the auspices of the National Council and further surveys are contemplated. A complete audiometrical survey of all school-children in the Orange Free State is to be undertaken shortly.

TREATMENT

An important consideration in treatment is the psychological reaction of the patient to his disease. An illuminating example is the refusal by some patients to wear hearing aids although they may be in dire need of them. Nobody, however, would refuse to wear glasses should their eyesight become bad. For the same reason people are probably reluctant to consult doctors on deafness. The doctor himself can greatly contibute to overcome this bias and prejudice, but assistance of the social worker is necessary to cultivate the correct attitude of the patient towards his disease.

Even in treatment the patient's social and economic circumstances are very closely involved. The nutritional factor, for example, may not receive the required attention either because of the patient's ignorance of nutritional values of food, or because of his economic inability to provide the necessary foods. Again, the patient may be involved in high costs for treatment or operations. Cases have come to our notice where patients have received partial treatment, but have had to refuse further treatment, being unable to afford it. Much damage has been caused and in most cases those patients were brought to our attention at a stage too late for medical treatment to be of any further value. It often requires the assistance of the social worker to attend to these personal matters of the patient.

The doctor may find the patient suffering from noise deafness, and it may be futile for him to receive any kind of treatment while he continues to work under noisy circumstances. He may be a trained artisan capable of performing only that one particular trade. It requires a complete readjustment to find occupation under different circumstances in the same trade or perhaps to change over to a different trade altogether. Once again the assistance of the social worker is required.

Thus I emphasize the role of the social worker not as the odd-job man, but as a person that plays a very vital role even in treatment. It is not suggested that the social worker will now become a junior doctor or attend to purely medical matters, but it is emphasized that the role of the medical practitioner and that of the social worker are both important aspects of the same process. They should recognize each other's professional fields and work in close and continuous cooperation.

You probably know that the South African National Council for the Deaf some 6 years ago started a scheme for the supply of hearing aids. That scheme is still in operation and we have succeeded in supplying a large number of hard-of-hearing people with effective aids at a price that they can afford. Since the inception of our scheme the Department of Health has consented to supply hearing aids under their arrangements for the supply of medical aids to the indigent.

This scheme, however, has brought us certain problems in which the assistance of the medical profession is seriously solicited. You probably can quote cases from your own experience where hearing aids were sold to people who required not a hearing aid but a syringing of the ear canal. By whom, and under what circumstances, should hearing aids be sold? There is at present no control. Can this situation be allowed to continue? We had a case some years ago where manufacturers of farm implements sold hearing aids, and at an exhibition proudly displayed a hearing aid mounted on a farm tractor.

A further problem is how to fit the patient with an instrument that will be successful. There are two opinions today. On the one hand we have the audiologist who claims that a clinical examination and a hearing-aid evaluation is absolutely essential. On the other hand there are those who say that the only sure test is to let the applicant use the instrument for some time and decide himself. The one section holds that under all circumstances the work must be done under the supervision of a medical practitioner, while the other claims that the services

of a medical practitioner are not necessary in the fitting of a hearing aid. These matters require serious consideration and a joint effort by my Council and the medical profession.

I have also referred to the problem of noise. With growing industrialization and mechanization noise has become more or less synonomous with civilization. Daily people are working and living under the most noisy conditions without appreciating the latent danger, and in many cases the actual damage being done, to their ears. Neither workers, nor industrialists, nor anybody else in our country, seem to have yet awakened to this situation. My Council has called a National Conference on Noise to consider this problem in its various aspects. This conference will be held in 1956, and the medical profession will be invited. It is hoped that they will make a positive contribution in tackling this grave problem of modern society.

REHABILITATION

Hearing defects have a vital effect on the future life of the patient. Let us refer to the individual who has turned deaf or hard-of-hearing in later life and was not born with that condition. The implications of the defect are far-reaching in the patient's personal life, in his family and social relationships, and in his vocation. I can quote a case of a lady who turned deaf as a result of an accident; her family life was completely upset and the disruption nearly led to a dissolution of the marriage. It often implies that the patient will have to change his whole career.

The task, therefore, is not fulfilled when the doctor has completed his medical work. There is a definite following-up process which is essential; but the case is seldom brought to the attention of the correct authorities. The case of the lady that I have just quoted was brought to our attention 18 months after the accident, and after she had passed through the hands of several ear, nose and throat specialists. A further example is a child who at the age of 16 months contracted tubercular meningitis and was left deaf and blind. The case was not brought to our attention until 18 months after the onset of the disease. The child was under the best medical attention that South Africa could afford, but that was beside the question. To decide whether a deaf child is educable is the task of the deaf-educationalist and not of the medical man. To decide whether a deaf person is readjusted to social life and to his occupation is the task of the social worker and not of the medical man.

I cannot but refer to these examples as criminal negligence on the part of the relative medical practitioners. It is our common experience that patients are discharged from hospitals having turned deaf or hard-of-hearing and nothing is done for their future social adjustment. They are not referred to the proper authorities and channels to attend to their social needs. It is left entirely to the patient in his ignorance to acquire a hearing aid or special instruction.

Allow me to refer to a case that appeared in an allied field and was quoted at a public conference in Pretoria 2 years ago. An orthopaedic surgeon, passing one day a crippled person who was begging for his daily maintenance, recognized the deformity as due to curable disease. He offered free treatment, the patient was eventually discharged as cured, and the problem was apparently solved. The patient, however, returned to him shortly afterwards with the remark: 'Whatever you have done to me, please undo it. As a cripple I could beg and live on the mercy of other people; as a normal man I am untrained for any vocation and am offered no opportunity.' A striking example of the futility of medical attention without the necessary social readjustment!

In all the major cities of South Africa we have Societies for the Welfare of the Deaf. Some of them employ full-time personnel, others not; but at least some facilities exist and it is incumbent on doctors to refer to those societies the cases that may come to their notice. I admit that our facilities are insufficient to cope with the problems knocking on our door, but let us first use the facilities at our disposal and then ask for more. If we utilize those at our disposal the rest will automatically follow. Th assistance that may be required by patients after they have had the necessary medical treatment can briefly be listed as follows:

1. *Lip-reading*. Very few people appreciate to what extent any normal individual is utilizing lip-reading nor how important it is that a hard-of-hearing person should undergo special training in lip-reading to enable him to carry on with conversations. The Council do not yet provide facilities for lip-reading instruction, but trained logopaedists are available and arrangements can be made to afford people the necessary instruction. The problem however, has not yet been presented to us by the reference of specific cases for attention.

2. *The Supply of Hearing Aids*. Many patients are referred to commercial dealers. It is in the discretion of the doctor to refer his patient to whom he wishes, but it is futile to refer a patient to a dealer to buy a hearing aid which he cannot afford, whereas no person who comes to the National Council or its affiliates for a hearing aid is turned away on account of lack of financial means.

3. *Schools for the Deaf*. Special schooling is needed where the patient is a young child. Until the new School for the Deaf in Pretoria was opened in 1955, the authorities concerned were under the impression that the European deaf in South Africa were adequately catered for in the existing schools. It was expected by the authorities concerned that this school would draw its pupils from the existing schools for the deaf. Amongst the first 60 applications, however, there were 40 applications from children who had never been to a school for the deaf, the majority of whom were of school-going age. Is it still necessary to emphasize to professional people that a deaf child at the age of 3 should be in a school for the deaf and nowhere else? Continuously cases are referred to us where hard-of-hearing children are attending classes for normal children but are classified as backward, as mentally deficient. In most of these cases the child has been under treatment of a medical practitioner. It may not be the duty of the medical practitioner to attend to the social or educational

requirements of his patient, but it is his duty to refer those cases to the relative agencies.

4. *Social Intercourse*. In the field of social adjustment of the deaf the Council and its affiliates have embarked on a wide field of operation. In the various towns where there are Societies for the Deaf there are clubs where these people can enjoy the limited social intercourse that their condition allows, but at the same time they are given an opportunity to mix normally in society. The various deaf societies extend to all the necessary branches in the adjustment or readjustment of the auditorily handicapped.

With greater recognition of the social and emotional factors in illness there has grown a greater acceptance of the social worker and his help. It was the intention of this address to bring to the notice of the medical profession the work done by the South African National Council for the Deaf and its affiliates, to offer our help wherever we may be of assistance, and to appeal to the profession for its cooperation and assistance.

THE TETE RADIO-ACTIVE MINERAL AREA IN PORTUGUESE EAST AFRICA

A BRIEF SURVEY OF CASES AFFECTED BY RADIO-ACTIVE RAYS

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The atomic age on which we are embarking is now a few years old, and it is time that information on nuclear science were disseminated both among medical men and the public. The medical man will in the near future come in contact with patients affected by this new scientific development. The South African public will feel the impact of this new science through the mines which develop uranium ore. We feel justified, then, in publishing for the first time in South Africa some data from Portuguese East Africa, though brief and not yet fully accounted for.

One of us (A.S.) recently saw a patient (the co-writer) who, after spending some months in the highly radio-active area of a uranium mine in Portuguese East Africa, presented some disturbing symptoms, pointing to possible causation by radio-active rays:

The patient's first experience was in October 1954, after spending 3 days in workings at Inhatobue Mine, where a certain amount of pitchblende is found but where the radio-active intensity is relatively low. The first symptoms were exhibited a day after leaving the mine and consisted of vomiting, though not violent. Thereafter a general feeling of unwellness set in and persisted for 2 days. Nausea, headache, dizziness and vertigo were manifested.

In June 1955 after working for 2 weeks at Mavuzi mine in places where radio-active intensities varied up to 300 backgrounds, the patient suffered a fresh onset of symptoms, in the form of a sudden and violent attack of vomiting.

The most marked symptom was now deterioration in vision. It became difficult to read even the well illuminated scales of the instruments. Plotting of maps and drawing became hard labour. Nevertheless, distance vision remained good, so that it was thought that accommodation of the eye had been affected. This condition has not cleared up yet. Indeed, without spectacles, vision at close quarters is poor, so that occasionally food on a plate looks very blurred.

Acute headache was often experienced and this is still so today. The headache is localized behind and above the eyes and is sometimes accompanied by stabbing pain in the eyes, as well as nervous jumping of the eyes.

After the first attack of vomiting the patient took to suppressing the urge to vomit whenever it was felt, which was at irregular intervals and under all conditions. It might come on at meal times, when walking in the bush, at night in bed—there seemed to be no specific set of conditions that would cause the sudden and intense feeling of nausea. Even after the patient finally left the area at the end of September a strong recurrence of nausea and the associated general malaise occurred on 18 October, and lesser manifestations thereafter.

During the period 12 June to 28 September 1955 the patient on 3 occasions went away from the mine to non-radio-active areas, and on each occasion experienced a feeling of great relief, as though a considerable burden had been lifted from his limbs. On returning to the mine the lassitude, headaches, nausea and sleeplessness would return within 72 hours.

Owing to the very active life on the mine, the patient's weight fell from 178 lb. to 168 lb. The diet was rich in meat and potatoes, poor in green vegetables and fruit. He took one Paludrine pill every week as prophylaxis against malaria. The intake of alcohol was low, amounting to 1 pint of red wine daily. That of water was generally large, averaging 1 gallon daily, some days rising to 2 gallons (all drinking water is imported from Tete, 30 miles away).

We carried out examinations in this case, all with negative results, on the blood for abnormal cellular composition, the urine (24-hour collection) for radio-activity, the eyes for possible neutron-induced cateract, and the sperm for oligospermia or aspermia, which are often encountered in patients suffering from effects of gamma rays.

Other tests that may be used in investigating radio-active effects are:

(*a*) Objective studies of frontal-lobe functions to reveal an acute or late impairment of these functions.

(*b*) Urine analysis for amino acids, which are excreted in 2-20 times the normal amounts.

(*c*) Quantitative analysis for radio-active substances.

OTHER CASES IN THE MINE IN THE TETE RADIO-ACTIVE AREA

The radio-active effects upon humans is complicated by the diseases from which nearly all residents suffer here; i.e. malaria in Europeans and malaria, trypanosomiasis, epilepsy, syphilis, leukaemia and hookworm in Natives. However, a small number of reasonably healthy Europeans came into the area and stayed there long enough for curious manifestations to develop:

Case 1. European male aged 30 years, unmarried, resident in the area more than 5 years. Reputedly suffering from chronic malaria, on which account was frequently absent from work for two or three days at a time. Soon after the start of operations he commenced to have violent vomiting attacks, so that the Mine Manager sent him to Beira for medical observation and treatment. He returned after 2 weeks, having received no treatment because, beyond ordinary malaria, nothing tangible could be found. His own statement was: 'I'm a bit ashamed at having wasted 2 weeks in Beira. I felt so fine and there wasn't really anything wrong with me'. Within a week of his return vomiting attacks recommenced.

Case 2. European male aged 45 years, married, came into the area in mid-June 1955 and immediately commenced working in all highly radio-active areas. Free from malaria. After one month had sudden vomiting attacks. Suffered acutely from lassitude and failing vision, the latter so much that it was difficult to read instrument scales, even when well illuminated. This man made regular visits to places out of the area and on each occasion recovered within 24 hours from the feeling of lassitude and the urge to vomit. During September, after the quarry had been opened, he commenced to feel sharp foot-discomfort, and on testing his boots with the scintillometer found them to register 100 backgrounds. Occasionally blood was found in the urine. The tendency to vomit was always present during August and September but was always suppressed—sometimes with difficulty. During September stiffness in joints became very evident. All these symptoms ameliorated as soon as he left the area at the end of September. On 18 October a relapse of the symptoms was experienced in Johannesburg and vision continued to give trouble. Despite stronger spectacles the eyes are still unsatisfactory today, stabbing pains in the eyes are frequent and also sharp localized headache just above and behind the eyes. The urge to vomit is still felt occasionally.

Case 3. European male aged 35 years, resident in area 10 years, mainly in radio-active parts. Malaria sufferer but otherwise strong and much more active than average Moçambicano. Complains of difficulty in moving his legs when he has been in contact with radio-active concentrates, but otherwise does not exhibit the symptoms above outlined.

Case 4. European male aged 34 years, married, resident in area 7 years, throughout which time has been in frequent contact with radio-active ores and concentrates and has regularly visited all mines and workings. Suffers from malaria, arthritis and leukaemia (his doctor attributes the leukaemia to radio-activity). Acute lassitude and strong tendencies to vomit are very marked.

Case 5. European female aged 30 years, married, resident in area 7 years. Although for 5 years she lived only on the fringe of the radio-active area, she vomited strongly daily, until the 5th month of pregnancy, when this symptom disappeared. Child born mid-June 1955; the woman showed no symptoms, although during August and September the radio-active intensities in the dwelling house trebled. The infant, within a few days of arriving in the area, began to exhibit curious skin growths which cleared up, but not entirely, on fresh orange juice being given.

Case 6. European male aged 45 years, a miner. Malaria sufferer, but otherwise strong and apparently resistant to effects of radio-activity. Although his work brings him daily into close contact with highly radio-active ores in the mass, he seems to be little affected, beyond occasional stiffness in limbs and, on one occasion, a very marked eye condition that was ascribed to radio-active dust.

Case 7. European female aged 40 years, married, visited the area for 10 days in August. Free from malaria. Within 24 hours suffered arthritic pains in left hand and arm, which became more acute each day, but which passed away within 24 hours of leaving area. Her 4-year-old boy suffered no apparent effects during the visit, but immediately on leaving developed inflammation of tonsils for which he had to be treated.

Case 8. Native male aged 25 years, living in Manager's dwelling. Apparently strong. Two weeks after commencing service started having sharp attacks of vomiting.

Case 9. Native male aged 30 years, serving as mechanic's assistant. Worked for 6 hours at the delivery end of the concentrating table, directly handling the radio-active concentrates. Was ill for 4 days, with violent vomiting, temperature, headache and inability to use limbs. This man had been stung by a large scorpion 3 weeks previously, resulting also in great pains, which he ascribed to the anti-serum which the nurse had injected and of which he did not approve.

Case 10. Native aged 40 years, a miner, had been working regularly in adits and on the surface for 3 years. When sent down a shaft where radio-active intensity is 200 backgrounds, temperature over 105° F and humidity 85%, after 4 hours he fell unconscious following very violent vomiting, and on coming round found difficulty in using his legs.

These instances in Natives could be multiplied many times. In the Capompo quarry, where the radio-active intensity varies between 200 and 300 backgrounds, labourers soon began to complain of aching feet. Other symptoms of radio-active sickness are somewhat masked by the effects of inherent diseases and the relative frequency of heat exhaustion. However, it was soon noted that, merely by carrying radio-active dust on the clothes, the Native labourers contaminated their compound so that intensity rose in 2 months from 3 backgrounds to 60 backgrounds.

DISCUSSION

It appears that 4 periods may be singled out in the disease:

1. Period of primary general reaction
2. Period of apparent clinical good health (latency)
3. Period of marked clinical manifestation of the disease
4. Period of recovery

The 1st period begins immediately after irradiation and lasts up to 3 days. The 2nd period lasts a varying time (2-3 weeks). In the 3rd period functional nervous effects appear. The 4th period is characterized by considerable improvement in the patient's general condition. Early (prophylactic) application of antibiotics, and the therapeutic use of various haemostatic drugs, have been recommended as an effective method of treatment of acute radiation disease, helping to alleviate the severity of symptoms of the 3rd period and bring about clinical recovery.[1]

The effects of irradiation may be seen in various occupational and other conditions; for instance: (*a*) patients submitted to radiation therapy, (*b*) workers in medical radiology, (*c*) workers in the nuclear-energy industry, and (*d*) workers in the uranium-mining industry. International standardization and inter-comparison of experience would be of great value in this field. Although radiation is easily measured, it is difficult to get reasonable uniformity when these measurements are made in diverse ways and places.[2]

In industrial establishments where there is a risk of harmful radiations great importance is attached to ventilation, and most working places are kept under

50 mm. water vacuum, so that all fumes pass up a chimney. Also special overalls and other clothing are furnished to all workers. Special dosimetric services are provided in all such installations.[3]

Low-level radiation attacks the blood, and although white-cell counting does not afford any measure of protection to a worker, real danger does threaten in the development of leukaemia, though severe blood changes caused by radiation do not necessarily develop into leukaemia. Another of the critical tissues is the lens of the eye. Long-continued small doses do not cause cataracts, but neutrons have a highly selective action on the lens.

The gonads are also sensitive to irradiation. Sterility, abnormal children in the first generation, and long-term genetic effects are evidenced. Shortening of the life-span in animals has also been evident, and the permissible maximum of 0·05 r. per day has a factor of safety of only 2. Damage to the genes is always permanent and no recovery seems possible. Irreversibility of the changes produced by irradiation is a general condition. In describing the injurious effects Stone discussed the question of how dosage is to be rated and what weekly dosage rate should be adopted. He mentions that persons over 45 years of age may safely be subjected to double the dosage permissible for those below that age, because the latent period for the appearance of injuries may be longer than the remaining life span of a person over 45.[4]

Other classes of person exposed to possible risk of dangerous irradiation include: miners and millers of other radio-active ores, personnel of atomic energy plants, residents of areas in which radio-active sewage and wastes are released, people administrating or receiving radio-active isotopes in medicine, users of radio-active isotopes in research and industry, makers of thorium gas-mantles.

SUMMARY AND CONCLUSIONS

A description is given of cases affected by irradiation in uranium mining. It is still too early to assess the full significance of the effect of these irradiations on the human body. Experimental work is being carried out at present in many parts of the world, and the closest cooperation exists. South Africa, being an important centre of uranium production, ought to cooperate with the rest of the world in the same manner. More information on the subject should be given to medical men and the public in general. The devising and standardizing of methods of detection, prevention and treatment are of the greatest importance.

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MENINGITIS DUE TO LISTERIA MONOCYTOGENES: CASE REPORT

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The organism *Listeria monocytogenes* is known to cause diseases which vary widely in their clinical presentation and occur in a wide variety of animals, including man. In 1926 Murray *et al.*[1] investigated the cause of death of a number of rabbits in Cambridge and from these animals they isolated a Gram-positive bacillus which when inoculated into rabbits produced as its most striking effect marked mononuclear leucocytosis. They found no report in the literature of a similar organism and they named the new microbe *Bacterium monocytogenes*. At the same time Harvey Pirie,[2] working in Johannesburg, was investigating a fatal disease of veld rodents (gerbilles). From these animals he isolated a Gram-positive bacillus and in his animal experiments he found liver necrosis to be the most prominent feature and, in honour of Lord Lister, he named this organism *Listerella hepatolytica*.

It was soon established that Murray and his colleagues in Britain and Harvey Pirie in South Africa had described identical organisms. In 1940 the generic name was altered to *Listeria monocytogenes* and the term listeriosis is used to cover the different clinical pictures which may result from infection with this organism.

Human listeriosis is not rare but, to date, no case has been reported in this country. The discovery of a case in the Cape, presenting with meningitis, prompts this report.

CASE REPORT

C.S., a European male of 55 years, is from Swellendam, where he has lived for many years. He is a harness-maker and leather worker. His illness started in mid-November 1955, when he felt out of sorts, with vague generalized aches and, after a week, he consulted his doctor, who noted that his temperature was 99°F but found no specific abnormal signs. He was kept under observation for a week, during which time his temperature gradually rose to 103°F. He became dull and apathetic, the abdomen slightly distended and the liver enlarged. A diagnosis of typhoid fever was suggested, and blood for a Widal test was taken and chloromycetin prescribed. Within 48 hours the temperature came down to normal;

but after another 24 hours it rose again, although the antibiotic was still being taken. A day or two later a report was received that the Widal reaction was negative and on this account chloromycetin was discontinued. The man's condition remained virtually unchanged and no other antibiotic was prescribed. On 12 December the white-cell count was 18,000 and examination of a blood film showed a marked predominance of monocytes and lymphocytes with scanty neutrophil polymorphs.

His doctor stated that the patient had always been obese and pale and had a slightly myxoedematous appearance, but that he had never received treatment for this. In 1940 he had an attack of rheumatoid arthritis and since then had had occasional attacks of polyarthritis. He has 4 children, the youngest of whom is 11 years. For the past 8 years he has had little or no libido.

The patient was admitted to Groote Schuur Hospital, Cape Town for further investigation on 18 December.

He was obese and drowsy but could easily be roused. Herpes febrilis was present on the lips. There was no pigmentation and he was not jaundiced. The skin was dry and the eyebrows scanty but axillary and pubic hair were normal. The cardiovascular and respiratory systems were normal and the blood pressure was 105/75 mm. Hg. The liver was enlarged (3 fingers breadth below the coastal margin) and was firm, smooth and non-tender. The testes were slightly smaller than normal and were sensitive to pressure. Examination of the central nervous system revealed no localizing neurological signs but neck rigidity was present and Kernig's and Brudzinski's signs were positive.

Investigations

Blood. There was no anaemia. White blood-cells 14,000 per c.mm., polymorphs 42%, lymphocytes 56%. There were no atypical monocytes or lymphocytes suggestive of glandular fever.

Urine S.G. 1020. Albumin and urobilin present. Bile and sugar absent. On microscopy no abnormal constituents were seen.

Lumbar puncture. The cerebrospinal fluid was opalescent and under normal pressure. Protein 140 mg.%. Globulin ++. Chlorides 682 mg.%. Sugar Normal. Cells: polymorphs 1,100 per c.mm., lymphocytes 170.

Blood urea: 48 mg.%.

Serum proteins. Albumin 3·9 mg.%. Globulin 4·3 mg.%. Thymol turbidity 5·5. Thymol flocculation 3.

Serum bilirubin: 1·2 mg.%.

Agglutination and other tests. Paul Bunnell, Widal, Brucella, Weil Felix, and Weil's disease, all negative. Wassermann test of blood and cerebrospinal fluid, negative.

Liver biopsy Section showed a pronounced degree of haemachromatosis. There were no organisms demonstrable on a Gram-stained section.

Serum iron: 365 micrograms %.

Bacteriology of Cerebrospinal-Fluid

A Gram stain of a smear of the spun deposit of the first cerebrospinal fluid sent for examination showed numerous cells and scanty small Gram-positive bacilli distributed in widely separated clusters. On each of a blood-agar plate incubated at 37°C aerobically, and a boiled-blood-agar plate incubated at 37° C under CO_2, 3-4 colonies were present and proved to be small, Gram-positive, diptheroid-like organisms. Ziehl-Nielsen staining of the CSF showed no acid-fast bacilli.

Examination of a second cerebrospinal fluid yielded the same findings. In view of the unusual clinical features, and the CSF chemistry and bacteriology, the diagnosis of Listeria infection was mooted.

The organism grew aerobically and anaerobically on Hartley's agar and blood agar. The colonies on blood agar were small, greyish in colour and opaque, with a smooth convex surface and entire edge. On Hartley's agar they were somewhat less opaque. Haemolysis of the blood agar was present beneath the colonies and was more marked in the anaerobic culture.

Growth on McConkey's medium was minimal. A glucose-agar shake-culture showed no special features. Growth was obtained at 4° C and on media containing 6% NaCl. Growth in broth tended to be granular, the granularity disappearing as the deposit was shaken into the supernatant broth.

Hanging-drop examination for motility was positive and motility was confirmed in a Craigie tube.

Acid, but no gas, was produced after 24-hours incubation in dextrose, maltose, rhamnose and mannose. A small amount of acid was formed in sucrose, lactose and dextrin. The sucrose and lactose media were strongly acid after 6 days; there was no increase of acid in the dextrin.

No acid was formed in galactose or glycerol and the organisms failed to grow in Koser's citrate. There was no H_2S production and no hydrolysis of urea. The methylred reaction was positive and the Voges-Proskauer negative. Growth occurred in litmus milk with the formation of acid, but no clot or digestion. The catalase test was positive.

The organism was shown to be sensitive to chloromycetin, streptomycin, terramycin and ilotycin but not to penicillin or sulphatriad.

Six mice each received an intraperitoneal injection of 0·5 ml. of an overnight broth-culture. Three died within 48 hours and two more in 72 hours; the remaining one died after 6 days. The organism was recovered from the heart-blood, liver and spleen. At autopsy small scattered yellow areas were noted on the livers, and histologically these areas proved to be small areas of necrosis with a surrounding polymorphonuclear reaction. Gram-positive bacilli were demonstrated in these lesions.

At the same time 0·5 ml. of overnight broth-culture of the organism was injected intraperitoneally into 2 rabbits and 2 guinea pigs. Drops of culture were instilled into the eyes of the rabbits without scarification of the cornea. No keratitis developed nor did any of the animals show outward signs of illness. A differential leucocyte count performed on one rabbit was as follows:

	Total	*Poly.*	*Mono.*	*Lympho.*	*Eosino.*	*Baso.*	*Absolute Monocyte Count*
Before inoculation ..	4,500	8	0·5	84·5	6·5	0·7	24·5
4 days after inoculation ..	9,000	57	13	23	7	—	1,170
8 days after inoculation ..	6,400	32	1	66	1	—	64

Course and Treatment

The patient's temperature subsided spontaneously by 21 December. However, his general condition remained unchanged

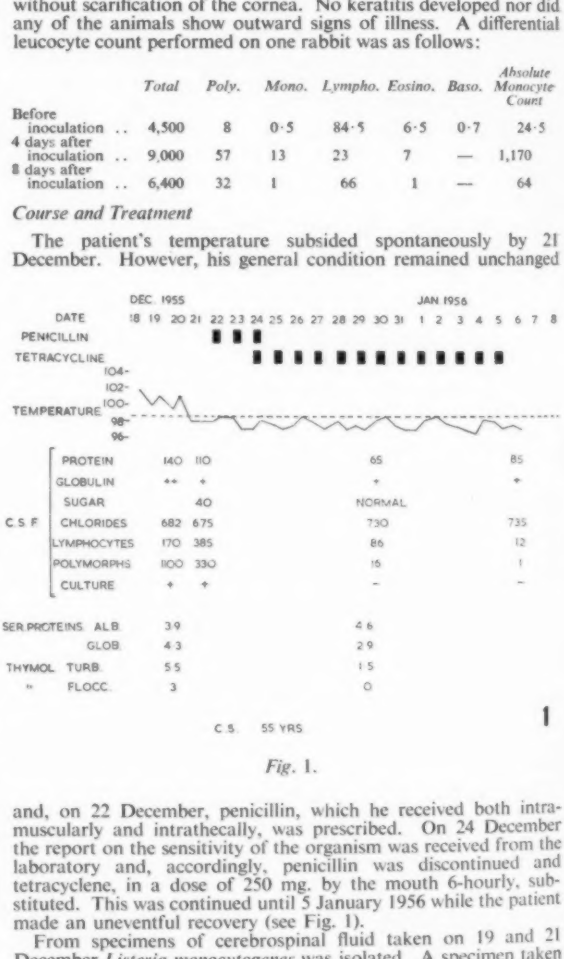

Fig. 1.

and, on 22 December, penicillin, which he received both intramuscularly and intrathecally, was prescribed. On 24 December the report on the sensitivity of the organism was received from the laboratory and, accordingly, penicillin was discontinued and tetracyclene, in a dose of 250 mg. by the mouth 6-hourly, substituted. This was continued until 5 January 1956 while the patient made an uneventful recovery (see Fig. 1).

From specimens of cerebrospinal fluid taken on 19 and 21 December *Listeria monocytogenes* was isolated. A specimen taken on 30 December was sterile and showed considerable reduction in

the cell count, while the specimen taken on 6 January 1956 was virtually normal.

The serum proteins and liver-function tests which were abnormal on admission had reverted to normal 10 days later (see Fig. 1).

DISCUSSION

Listeria monocytogenes has been isolated from at least 27 different species of animal (including man), and its distribution is world-wide. The nature of the disease it causes may vary considerably from case to case within the same species and tends to vary in its manifestations from species to species. For instance, in ferrets infection results in an extremely mild illness which is little more than a carrier state, while in other species it may manifest as a meningo-encephalitis or generalized septicaemia with a very high mortality. It may present also as a focal necrosis of the liver, a genital-tract infection or, less commonly, a conjunctivitis, a myocarditis or a distemper-like illness.

Human listeriosis is not rare, but it has not previously been reported in South Africa. Murray[3] has analysed the reported human cases and the following chart[3] summarizes roughly the types of clinical presentations and the frequency with which they occur.

Clinical Presentation	*Approximate %*
Meningitis and meningo-encephalitis	33%
Granulomatosis infantiseptica	29%
Septicaemia	21%
Mononucleosis	8%
Conjunctivitis	6%

Granulomatosis infantiseptica is an intra-uterine infection of the newborn. The predominant feature of this condition is extensive focal necrosis affecting especially the liver and, less often, the lungs. The mortality rate is very high. Occasionally meningitis may be associated with it. The organisms can be isolated from the affected areas in the child and frequently from the genital tract of the mother, who may or may not manifest the disease. Should she do so the mortality rate is low. This condition appears to have occurred most often on the continent of Europe and has been reported mainly from Germany.

SUMMARY

1. A case of meningitis due to *Listeria monocytogenes* is reported. No record of a similar case in South Africa has been found.

2. An incidental finding in this patient was the presence of haemachromatosis.

3. A brief review of the clinical manifestations of listeriosis in man is given.

This patient was referred to Groote Schuur Hospital by Dr. F. C. Malherbe of Swellendam and was admitted to Professor J. F. Brock's wards. Thanks are due to Professor Brock and to Dr. N. H. G. Cloete, Superintendent of Groote Schuur Hospital, for permission to publish the case. We are indebted to Dr. C. J. Uys for the histological reports and to Professor M. van den Ende, Head of the Department of Bacteriology, for advice.

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2. Pirie, J. H. H. (1926-1928): Publ. S. Afr. Inst. Med. Res., **3**, 163.
3. Murray, E. G. D. (1955): Canad. Med. Assoc. J., **72**, 99.

FEDERAL COUNCIL MEETING, VEREENIGING

The Federal Council of the Medical Association of South Africa held its half-yearly meeting at the Union Steel Corporation Recreation Hall, Vereeniging, Transvaal, on 11, 12 and 13 April 1956. The Chairman (Dr. A. W. S. Sichel) presided, and there were also present the President of the Association (Dr. J. H. Struthers), the Hon. Treasurer (Dr. J. S. du Toit) and 46 other members and proxies. Twelve Council members were absent and 6 non-members of Council attended as proxies. Seven morning, afternoon or evening meetings were held.

Provision of Medical and Dental Services in relation to Medical Ethics

The South African Medical and Dental Council had convened a further conference on this subject in Cape Town on 24 March. A memorandum was before the present Federal Council meeting (set out at page 458 of this issue) which the Association's representatives had submitted at the conference. In it, reference was made to a judgment (28 November 1955) of a district court of the State of Iowa, USA, in which it was held that, by the law in that State, certain hospitals, not being 'persons' entitled to practise medicine, could not legally charge fees to patients for medical services rendered by hospital staff. After debate it was decided to obtain legal opinion on the position in South Africa.

Contract Practice

On consideration of the Association's machinery for dealing with contract-practice affairs the following decisions were made:

1. *Branch Contract Practice Committees.* Branches shall manage all contract-practice affairs in their areas. All Federal Council members representing a Branch shall be *ex officio* members of the Branch Contract Practice Committee.

2. *Liaison between Branches.* When a contract-practice matter affects more than one Branch, the Branch Contract Practice Committees shall meet together; and if unable to reach a solution they shall refer the matter to the Central Committee for Contract Practice.

3. *Central Committee for Contract Practice.* This Committee shall be composed of Federal Council members representing Branches on a *pro rata* basis. (The following members were appointed: Southern Transvaal Branch—4 members—Drs. Agranat, G. T. du Toit, Peskin and Vercueil; Cape Western—3 members—Drs. Currie, Lee and McMurray; Northern Transvaal—2 members—Drs. J. G. A. du Toit and Ziady; Natal Coastal—2 members—Drs. Deale and Broomberg; O.F.S.—1 member—Dr. Visser; other Branches—3 members—Drs. Alexander, Armitage and M. A. Robertson.)

4. *Central Executive.* The Executive Committee of the Central Committee for Contract Practice shall consist of its members resident in the Transvaal. The Executive shall meet at frequent intervals between the meetings of the full Committee.

5. *Tariff of Fees.* The Central Committee for Contract Practice shall consider the setting up of a tariff of minimum fees as a guide to the Branches, on which the Branches can base loadings for the various parts of their Branch areas.

6. *Secretariat.* A medical practitioner shall be appointed to act as local secretary of the Association in the Transvaal (with the status of associate or assistant secretary).

Open and Closed Panels. A resolution was passed that the policy of the Association is to ensure free choice of doctor by patient, and of patient by doctor, and accordingly future appointments should be on the basis of open panels, unless in exceptional circumstances and after approval by Federal Council.

Proposed Medical Aid Plan sponsored by the Medical Association

Dr. M. Shapiro submitted the report and recommendations of the subcommittee on the Economics of Medical Practice (set out at page 460 of this issue). A number of members spoke in favour of the proposal, after which the recommendations of the Subcommittee were passed. It was also decided that, in empowering the committee to inaugurate the Fund, Federal Council should advance, if necessary, a sum up to £1,000, which should be repayable.

District Surgeons

It was decided that the Parliamentary Committee, together with representatives of the District Surgeons' Group, should seek an interview with the Secretary for Health to discuss the conditions of service of part-time District Surgeons; the Group were asked first to supply a memorandum on the subject, with a model contract.

Financial Statement

The Hon. Treasurer reported that the Association accounts, which had not then been audited, showed a probable surplus of about £2,000. The estimates for 1956 were passed, with an expected shortfall of £1,600.

The *Benevolent Fund* accounts for 1955 showed an income of £3,761 and a payment of grants totalling £2,473. As compared with the previous year the donations received (£1,123) had decreased by £1,713. The accumulated funds at the end of 1955 amounted to approximately £41,965.

It was announced that exemption from the Donations Tax had been granted for donations to the Benevolent Fund; and it was decided to apply for exemption from Estates Duty also.

A decision was taken to increase the interest on the Benevolent Fund's mortgage loan in respect of Medical House, Cape Town, in accordance with current rates. (It was subsequently fixed at 6½%.)

Association Officials

No appointment of Assistant Editor having been made, it was decided to advertise the position of Editor. The basic salary scale for the Secretary and the Editor was fixed at £1,800 × 60—£2,400, and that of the Associate Secretary and Assistant Editor at £1,250 × 50—£1,750. The position of Public Relations Officer was brought to an end and the engagement of the present temporary incumbent was terminated.

Library Grants

On consideration of the report of a meeting with representatives of University medical libraries held in Cape Town on 26 January 1956, it was decided to continue the policy of supporting medical libraries which will supply the needs of Association members, and (in principle) that, if the libraries of the 3 other medical schools in the Union provide a service on the basis of that now provided by the Universities of Cape Town and the Witwatersrand, they be given grants equal to those given to these two, which should not be reduced. Branches in whose area a medical library is situated were recommended to support that library financially as far as possible.

Dr. H. A. Moffat Memorial Fund

It was decided to hand over the amount that had been collected to the University of Cape Town to establish an annual certificate and book award (of the value of approximately £12 10s. 0d.) for a 5th-year medical student to be selected after a competitive examination to be conducted by the Professor of Surgery.

Legal Defence of Doctors

The establishment of a South African Medical Protection Society was favourably considered, and it was decided to invite the Medical Protection Society in London to send a representative to discuss the matter.

Potentially Harmful Drugs

Government Notice No. 1825 of 1955 lays down that all substances and preparations included in the Sixth Schedule of the Medical, Dental and Pharmacy Act must be labelled with the words 'Potentially Harmful Drug'. On the representation of the Ethical Drug Association, which considered that this might render patients unduly apprehensive, it was decided to make representations to the Minister of Health to alter the regulation so that preparations would in future be labelled 'Sixth Schedule'.

Inquests

At the request of the Secretary for Health it was agreed to set up panels of practitioners to assist inquest magistrates, and to ask the Branches operating in Cape Town, Johannesburg, Pretoria, Durban and Bloemfontein to nominate panels.

Personal

The President, Dr. J. H. Struthers was appointed to be the Association's representative at the forthcoming Annual Meeting of the British Medical Association. Dr. Emilia Krause was appointed as an alternate delegate, and also as delegate to the 10th General Assembly of the World Medical Association to be held in Cuba. Dr. L. I. Braun was nominated to be the Association's representative on the Witwatersrand Medical Library Committee. Dr. A. Landau was appointed member of the Executive Committee of Federal Council in place of the late Dr. M. Cole Rous.

Honours. The following were recommended for Emeritus Membership and were unanimously appointed: Dr. Robert Donald Kidd and Major-General A. J. Orenstein.

THE PROVISION OF MEDICAL AND DENTAL SERVICES IN RELATION TO MEDICAL ETHICS*

BY DRS. M. SHAPIRO (CONVENER), J. H. STRUTHERS, E. W. TURTON, J. G. DU TOIT, AND J. GLUCKMAN

The Medical Association is disturbed by the ruling given by the South African Medical and Dental Council in March 1949 that the Council has no jurisdiction over bodies corporate which provide medical and/or dental services to the public. While accepting the validity of this ruling the Association is of the opinion that the legality of the position whereby corporate bodies are rendering medical services to the public and charging fees for such services is itself open to question. In a recent judgment in the District Court of the State of Iowa in and for Polk County it was held: 'That under the Iowa law the privilege of practising medicine is a personal one requiring qualifications which cannot be met by a corporation.' We believe that the position is the same under South African law.

Notwithstanding this judgment, the Association recognizes that in certain exceptional circumstances it should be permissible for particular corporate bodies to charge fees for services rendered by the registered practitioners employed by such bodies. For this reason it is necessary that such bodies be afforded the necessary legal status; that their scope and function in relation to the practice of medicine for gain should be strictly defined; that their activities in this regard should be so limited as not to conflict with the legitimate interests, rights and privileges of registered practitioners engaged in private practice; and that the same ethical discipline as applies to private medical practitioners should apply equally to practitioners in the employ of such corporate bodies and to the corporate bodies themselves through their chief medical or dental officers. Only such bodies as are non-profit-making in truth and in fact and whose objects are approved by the medical and dental professions should be entitled to recognition.

Since the jurisdiction of the Council at present extends only to persons registered under the provision of the Medical, Dental

* A memorandum presented at the Conference on the Provision of Medical and Dental Services in relation to Medical Ethics, convened by the South African Medical and Dental Council and held in Cape Town on 24 March 1956.

and Pharmacy Act, it will be necessary to extend the scope of the Act in a manner similar to that provided for Bodies Corporate carrying on business as Chemists and Druggists (sec. 76). This will enable the Council to frame appropriate ethical rules which they are precluded from doing at present. In our view, licences to practise medicine and dentistry by corporate bodies should be granted only with extreme care and circumspection and the conditions under which they may engage in private medical or dental practice should be strictly defined and controlled by the Council itself and should be subject to periodic review. A precedent for such definition and control already exists in the case of missionary and other doctors who are not entitled to full registration under the Act.

The *Friendly Societies Bill* is designed primarily to safeguard the contributions of persons banded together for the provision of a variety of benefits on the basis of mutual insurance. If the statutory recognition of such bodies were to confer unfettered legal rights in the practice of medicine and dentistry this would constitute the gravest possible threat to the rights and privileges of registered doctors and dentists. Already the point has been reached where a corporate body such as the Vanderbylpark Sick Benefit Fund reserves to itself the right (in defiance of medical professional opinion as represented by the Medical Association of South Africa, and, we submit, in contravention of South African law) to extend the facilities which it offers to all such persons and groups as the Fund may in its sole discretion decide, and to provide medical services to them on the basis of a closed panel of full-time medical officers appointed by the Fund. To quote another example, the Northern Medical Aid Society was originally formed to cater for the employees of 3 companies. They have extended their activities to embrace 50 companies. One of the conditions for participation is that each new company joining the scheme shall contribute a *pro rata* amount of the accumulated funds of the Society calculated on the basis of the accumulated funds and the number of members in existence at the date of the last balance sheet. The Society lays down no income limit for members joining the Society. In the year ended 30 June 1955 new participating companies paid £2,972 for the privilege of membership for their employees and directors. In effect, this was the premium paid by the new participating companies to acquire the facility of purchasing medical services at rates considerably below those applicable in private practice—a privilege originally granted by the Medical Association to the 3 parent companies. The Mines Benefit Society has a similar provision for the incorporation of new companies. We regard this arrangement as a clear case of exploitation of the medical profession.

The intervention of a third party in the relationships between medical practitioners and individual members of the public entails risks which require to be carefully guarded against. By analogy, it can be readily appreciated that the entire process of law could be subverted if corporations and companies were to be granted the right to nominate and remunerate the lawyers who could be chosen to defend, in the Courts of Law, the individual interest of all persons who fall under the control of such companies—whether by compulsion or by voluntary submission. The threat to professional standards and relationships is perhaps less obvious but no less cogent in the case of doctors employed by corporate bodies. The personal responsibility and intimate relationship between patient and doctor is the keystone which supports the entire legal and moral structure of medical practice and it is apparent to us that attempts to dislodge it are being made on all sides. We have the gravest misgivings that the statutory recognition of medical benefit and medical aid societies and similar organisations under the Friendly Societies Bill may confer legal sanction upon such bodies to engage in medical and dental practice in competition with private practitioners.

A similar principle is involved in the statutory registration of auxiliary personnel under the *Supplementary Health Services Bill*. It appears to us that this proposed legislation may confer rights and privileges on individuals which have hitherto been the prerogatives of registered medical practitioners. The South African Medical and Dental Council appears to be already committed to supporting the Bill in principle. We would urge that the full implications of the Bill so far as the medical and dental professions are concerned should be carefully examined in consultation with the Medical and Dental Associations of South Africa before it is translated into law.

In our view the Council's present definition of 'farming out' is inadequate. As an example we would instance the arrangement in the Transvaal (of which the Council is aware) whereby fees are charged to private patients for radiological and other services performed by the full-time staffs of public hospitals. In an effort to regularize the ethical implications of this arrangement, the Transvaal Provincial Administration agreed with the Medical Association of South Africa to establish a separate fund for radiological fees accumulated in this way; the disposal of the funds to be determined in consultation with the Medical Association. Several thousands of pounds have accrued to this fund as a consequence of this arrangement but it has now been found that there is no legal machinery for the disposal of the monies in the manner comtemplated. In consequence, these monies have been and are being appropriated by the Provincial Administration. If, as we believe, the legal decision in the Court of Iowa is equally applicable in South Africa, the fees charged to private patients by the hospitals for these services may not have been levied legally in the first instance.

The Association is also concerned over the rights apparently extended to full-time medical personnel employed by bodies corporate such as the S.A.I.M.R. and the University of the Witwatersrand with regard to the publication of the names of members of staff in articles and news items in the lay press and in radio broadcasts. On occasions such articles and news items have been accompanied by photographs. The Association recognizes the desirability of publicizing research activities, especially those that are subvented in large measure by public funds and donations. However, the fact that the Institute and the University through their full-time staffs are jointly engaged in the practice of pathology under contract with the Transvaal Provincial Administration while the Institute itself is actively engaged in normal private practice raises the question of the ethical relationship of these bodies *vis-a-vis* registered medical practitioners engaged in private practice. Moreover, there is clearly nothing to prevent full-time clinical personnel receiving publicity in their full-time professional capacities and subsequently engaging in private practice.

The Medical Association has pointed out previously that the acceptance by pathological laboratories of appointments for pathologists to Sick Funds and public institutions—particularly without advertisement—is unfair to private practitioners. Since these advertisements—when they appear in the medical press—always call for the names and qualifications of the registered persons applying for the posts, we are at a loss to understand how a corporate body is in a position to apply for or to accept such appointments.

The payment of collection fees is another matter requiring consideration. It is understood that the S.A.I.M.R. has an arrangement with the United Medical Services whereby the latter body (which is a private, profit-making company) is billed in full for all fees for pathological investigations performed by the S.A.I.M.R. for patients housed in the nursing homes owned by the Company. The Company deducts 20% on payment of the Institute's account. In 1947, a member of the Association requested a ruling from the Council as to what his ethical position would be if he entered into an arrangement whereby a nursing home would collect his fees less a percentage for collection and he was informed that in the opinion of the Executive Committee of the Council 'it would not be correct for the nursing home to collect the fees and to deduct a percentage for such collection'. Similarly, when the Northern Transvaal Branch of the Association requested a ruling as to whether it would be ethical for doctors to accept full financial responsibility for pathological investigations carried out by the Institute of Pathology in Pretoria and to pay the Institute the full fees less 15% to cover bad debts and collection costs, the Branch was informed that such an arrangement would be contrary to the Council's ethical rules. The Association accepts these rulings as being correct and proper but wishes to point to the anomaly whereby corporate bodies are exempted from its rulings because they fall outside the jurisdiction of the Council. The payment of collection fees to an independent debt collector is clearly unobjectionable in certain circumstances but in the case of the arrangement between the S.A.I.M.R. and the United Medical Services, the arrangement is such that according to the Council's own ruling it would not be correct if entered into by a registered medical practitioner. According to Dr. Cluver's letter to the Council of 27 July 1955:

'This arrangement between United Medical Services and

the Institute has twice been reported to the South African Medical and Dental Council by the Director of the Institute. It is arranged in this particular way because the onus of collecting fees for pathological services in their nursing homes then falls upon United Medical Services; the Institute therefore suffers no bad debts and incurs no expenses in collecting fees. There is no contract involved in the arrangement, the Institute enjoys no monopoly on pathological services in these Nursing Homes, and no doubt private pathologists could come to the same arrangement with the United Medical Services if they so desired. In effect United Medical Services for a fee acts as a debt collecting agency, and to the best of our knowledge it is not considered unethical for a doctor, a group of doctors, or a medical organization to employ a debt collection agency.'

Such an arrangement goes much further than either of the two on which the Council has already expressed an adverse opinion. Since the patient is billed together with the nursing-home charges weekly, or at the latest before discharge from the nursing home, prompt payment of the pathological fees by the patient to the Company is assured in the vast majority of cases. The very substantial percentage of the gross account deducted as a 'collection charge' provides a very strong incentive on the part of the Company to steer the pathological work for patients in their nursing homes in the direction of the Institute.

According to our information a Company owning certain nursing homes has an arrangement with a certain Sick Fund to make payment direct to the Company for radiological services rendered to the patients of the Fund by the radiologist or radiologists whose equipment is installed in these nursing homes. The fees are alleged to be on a basis not contemplated or approved by the Medical Association. This matter is under investigation by the Association at present. We mention it at this stage to demonstrate how the intervention of third parties over which the Council has no control may vitiate proper professional relationships and how undesirable precedents, if left unchecked, tend to undermine the high ethical code enjoined on registered practitioners by the Council.

REPORT AND RECOMMENDATIONS OF THE SUB-COMMITTEE* OF FEDERAL COUNCIL ON THE ECONOMICS OF MEDICAL PRACTICE

For and on behalf of the Sub-Committee

M. SHAPIRO

1. Your Committee has given careful consideration to the Report submitted on investigations made in the United States of America, Canada and England and it has the following comments and recommendations to offer to the Federal Council.

2. With the possible exception of the Canadian Plan, the Plans in those countries do not offer benefits which are as complete as those offered at present by the larger Medical Aid Societies in South Africa. The statistical and other information gathered by the Public Relations Officer during his visit to those countries should, however, be of considerable assistance. Your Committee is of the opinion that the proposed Plan must be comprehensive and it must offer benefits with minimal limitations especially for serious illnesses. It is in the last-mentioned field that the majority of the local Societies fail, as the total benefits in any one year are limited, and in many cases only a percentage of the medical expenses are met. The cost of treating cases of long duration is of necessity very heavy even though these cases form only a small proportion of the total number of cases treated. To the patient, such costs may be crippling.

Proposed Plan

3. It is recommended that the proposed Plan be proceeded with. The Association should sponsor the formation of a non-profit company to be registered under Section 21 of the Companies Act. No fees should be paid to the directors, nor should profits be distributed directly or indirectly to the shareholders or any other persons connected with the Company. The accumulation of funds by the Company should, so far as possible, be restricted to provide for necessary capital expenditure and reasonable reserves to meet its commitments. In the event of the Company being wound-up, it should be provided that any surplus will be distributed amongst charitable or like institutions to be nominated by the Federal Council of the Medical Association of South Africa.

4. It must be the aim of the Company to provide the South African public with a comprehensive service at a reasonable cost, and to pay the medical profession reasonable fees for services rendered. The benefits must provide for treatment in the home, consulting room or hospital. Ancillary services necessary to carry out contemporary medical treatment must also be provided subject to the conditions which are stipulated later in this report.

Finance

5. It is proposed that the Plan should be financed by a small interest-free loan being made by each doctor participating. Although the amount required to start the Plan has not been calculated, it is thought that the loan made by each participating doctor should be a minimum of £10. The Plan should attempt to redeem these loans as soon as funds permit, but in the event of any participating doctor resigning from the Plan, the amount standing to his credit on loan account will be refunded.

Control

6. It is recommended that control of the Plan should be vested in a board of directors appointed by the Medical Association of South Africa and the participating doctors. Provision should also be made for the inclusion of directors representing commerce, industry or other interested bodies. The number of directors appointed by the profession shall, however, represent not less than two-thirds of the total number of directors.

7. It is also recommended that the Minister of Health be asked to nominate an observer to attend the meetings of the board of directors.

8. Your Committee is of the opinion that control should be vested in the profession as (i) the provision of medical services is primarily the function of the medical profession, and (ii) the Plan is being sponsored and financed by the profession. Should any crisis arise, it would concern the profession.

Fees

9. In considering this subject, your Committee resolved that the tradition of the profession in accepting lower fees for service to the lower income groups in the community should be maintained. It was considered that the most equitable method of providing this service would be as follows:

(i) Schedules of fees should be determined for medical services to be rendered to the various groups of subscribers in accordance with their incomes. It is possible that as many as 5 different schedules will be in use. Members should then be classified by the Plan according to their incomes.

(ii) Members of the Plan should be provided with identification cards, and these cards should not indicate in any way to which particular income group the patient belongs.

(iii) Fees should be paid to the profession on the basis of per service rendered and in relation to the particular schedule applicable to the member. As the medical practitioner would not normally know in advance which schedule applies, he will merely fill in the nature of the service rendered and the amount due will be assessed by the Plan in accordance with the classification of the member. If a member has misrepresented his income in making applica-

* Members of the Sub-committee are Drs. M. Shapiro (Convener), A. L. Agranat, G. T. du Toit, J. G. A. du Toit, J. Q. Ochse, M. Peskin, L. O. Vercueil, J. Wolfowitz and F. Ziady.

tion for membership, the directors shall investigate the case and take the appropriate action.

10. At present many practitioners complain that the forms which are required to be furnished to Medical Aid Societies when completed are handed or sent to the patients, who are lax in forwarding them to their Societies. It is proposed that the accounts be forwarded directly to the Plan by the medical practitioner as soon as treatment has been completed or at the end of each month.

Specialist Services

11. Your Committee recommends that the present method of differentiating fees for specialist and general practitioners in the tariffs of fees be retained. For the purposes of this Plan a specialist shall be required to act as a consultant in accordance with existing practice and the policy of the Medical Association of South Africa in relation to Medical Aid Societies.

Participating Medical Practitioners

12. If any specialist or general practitioner wishes to participate in the Plan now being recommended, he should be required to:

(i) Enter into a contract with the Plan agreeing to abide by the schedules of fees laid down by his Branch of the Medical Association of South Africa, and in the event of a dispute regarding fees, to accept the determination of the Board of Directors as final;

(ii) apply for participation annually and pay the prevailing subscription fee;

(iii) submit to such disciplinary control as may be determined by the Directors; the right of appeal against any such disciplinary action shall be safeguarded.

13. Lists of the names of participating doctors should be available to members. If a person is attended by a non-participating doctor, the member shall be personally liable for the fees, but the Directors may, in their entire discretion, refund to the member an amount not exceeding the scheduled fees.

14. All participating doctors should be required to be members of the Medical Association of South Africa.

Cash Benefits

15. It is not proposed that any cash benefits such as sick-pay, death or funeral benefits should be paid by the Fund.

Drugs, Medicines and Dressings

16. Your Committee is of the opinion that the provision of drugs, medicines or dressings should not be a direct liability of this Plan.

Hospital Services

17. As hospital expenses form a considerable proportion of the costs of the treatment of serious illness, it is recommended that they may be included as one of the benefits provided. The provision of this benefit should, from time to time, be reviewed as the policy of the provincial administration is revealed. If universal 'free' hospitalization is provided, then subscriptions should be adjusted and the benefit should be discontinued.

Maternity

18. Confinements can be costly, and for this reason it is recommended that medical fees and maternity hospital charges be met by the Plan.

Dental Services

19. It is not proposed to include dental services as one of the benefits to be provided.

Limited Benefits

20. Your Committee is of the opinion that some limitation should be imposed on the costs incurred in radiological and pathological investigations. The final recommendation will depend on meetings which are to be arranged with these groups. Physiotherapy is another benefit which should be controlled by a limitation of some description. The final recommendation should be made after discussion with the group concerned.

Waiting Periods

21. It is thought that it will be necessary to impose waiting periods on members, as it is certain that some persons may join merely to have certain treatment carried out and then resign. The waiting periods should relate to conditions of long standing, which do not require immediate treatment.

All members should be required on application to make a declaration of the conditions from which they are suffering.

The treatment of congenital deformities should not be paid for by the Plan unless the child was born during the term of the parents' membership.

Commencement of Operations

22. Your Committee recommends that the Plan be commenced as soon as possible in one area only. It is thought that in view of the financial responsibility involved, it would be unwise to commence operations on a national basis. It is essential to run a pilot Plan in one area in order to train personnel and solve the unexpected difficulties which inevitably arise during the establishment of a new business. The Plan can then be established in other areas which could be supplied with accounting and other information.

23. Once commenced, it would be necessary to coordinate the Plan policies and provide a source from which reliable statistics and trained personnel may be obtained.

24. In advising Federal Council to commence operations as early as possible, your Committee wishes to draw attention to the fact that a considerable amount of work still remains to be done. Actuaries will have to be consulted, an accounting system prepared; and forms and literature drawn up and printed. In addition, the various sub-groups within the Association have to be consulted regarding fees and other matters.

12 March 1956

CONSULTANT AND SPECIALIST REGISTER

BY A RURAL G.P.

Having greatly enjoyed two items in the *Journal* of 10 March, I am constrained to put some of my 'random thoughts' on paper.

I refer to Dr. James Black's 'Consultant and Specialist Register'[1] and Dr. Deal's Presidential Address,[2] the latter of which I had hoped to hear in person but was deprived of the privilege by the exigencies of general practice. I consider them both to be of a type of which it is impossible to have too many and which has much more appeal and usefulness than many of the erudite pieces to which we are treated.

I would permit myself one criticism of Dr. Black's article, and that is that his particular speciality is rather in a class by itself and some of his arguments are therefore only valid in connection with that particular speciality.

A pregnant woman desiring specialist treatment must needs go to a specialist obstetrician and the guiding hand of the G.P. is not so necessary as it may be when a patient is suffering from some disease. In the latter case the patient may not know whether it is his heart, his lungs, his kidneys or even his cerebral cortex which is at fault. This patient *must* have the guidance of his family doctor in his choice of specialist; and I hold no brief for the doctor who implies that he is 'just as good as a specialist' when a second opinion is requested or even hinted at.

As a semi-rural G.P. in a 'dormitory' area I would prefer, even after 25 years of general practice experience, that all the midwifery went to the specialist, that is provided I am kept in the picture.

I take this attitude because of the comparatively few cases which come under my care nowadays and the resultant lack of

practice. I have over a thousand babies to my credit and I have not yet lost a mother, but I realize that sooner or later I shall come up against a complication which once I should have recognized and been capable of coping with, but because of the comparative infrequency of midwifery in my present practice I may now find beyond my capabilities.

RECENT EXPERIENCE

To revert to my remark about being 'kept in the picture', a recent experience will illustrate my point. I have a household in my practice where the doctor-patient relationship is *almost* ideal; until recently, I should have left out the qualification.

There are 3 children in the family and another was desired. Some 18 months ago Mrs. X told me that for 2 years she had been disappointed at her failure to become pregnant. The situation was discussed and I tendered certain advice. Some 6 months later I was attending one of the children, when Mrs. X casually informed me that she had an appointment that day with a specialist obstetrician and that as he had attended her with her previous confinements (before my time) she would like him to attend her again. Good! I thoroughly approved and said so, but I was very disappointed when I heard nothing from the specialist as to her progress, except when I met him casually and asked him, knowing that she had recently been to see him. There was, therefore, no excuse for his ignoring the fact that I was involved. Subsequently, though I was not attending at the house at the time, I knew that she was overdue, but it was only at a chance meeting with the specialist over another case that I learned that all was well and that Mrs. X had achieved her ambition in that she had given birth to a boy 3 days before.

That was not the end of the story, Mrs. X was advised to consult a Sister Y who specializes in infant management, this for a perfectly normal child. I do consider myself capable of managing the feeding etc. of the normal infant, especially with my intimate knowledge of the home and the mother. The inevitable conflict has now arisen and I have to tender my advice with a certain amount of trepidation as I am up against the authority of another person who has the advantage of having been recommended by a specialist.

So much for the obstetric specialist, who is, to my mind, in the ideal position to bring the family doctor into the picture and to emphasize his value to the patient. It must be remembered that in the above case it will be the baby who will suffer unless I can use my privileged position as *family* doctor to avoid the results of 'too many cooks'.

CHOICE OF SPECIALIST

When we come to consider the other specialties, there are in these days so many subdivisions that it has become even more necessary for the G.P. to direct the patient to the correct specialist for his peculiar problem. Not the last justification for the intervention of the G.P. is that he should be able to assist the patient in the avoidance of unnecessary expense. It is so easy to get on the 'roundabout', as it is often referred to by the lay public, and to be sent from one specialist to another, when the knowledgeable family doctor could easily indicate the short cut to the correct specialist.

The use of the word 'roundabout' in this connection by the lay public is surely a token of the regrettable suspicion with which they tend to view some of the efforts of the medical profession and its somewhat reprehensible lack of consideration for the ability of the patient to pay for his ride. It is so easy to say, 'I think we should have Dr. So-and-So's opinion', without considering that this will cost the patient another 3-5 guineas, hard-earned guineas at that. I think it fair to say that the family doctor is much more likely to consider this aspect, of which the tendency of the specialist to prescribe expensive proprietary medicines is another feature. This is well illustrated by the following example.

About a year ago Mr Y, a bricklayer, came to consult me when he was suffering from auricular fibrillation. Rest and Tab. Digit. Fol. soon brought the condition under control. A fortnight ago he came to see me again with the same condition; unfortunately he was short of time, I was a little late arriving at my rooms, and he went off intending to come again. Before he could do so a friend advised him to go directly to a specialist physician and even made the appointment for him to do so. He paid a fee of 5 guineas plus the cost of an ECG—the latter hardly necessary, at least in the acute stage of an easily recognizable condition, and he came away with a prescription for an expensive proprietory drug and instructions to consult a doctor as, using this drug, he would need constant supervision. He came back to me and it was obviously difficult for me to suggest the use of my original prescription when he had already spent a couple of pounds on his initial supply of the new drug. I put him to bed and visited him twice; on the third occasion he had gone to work, as his wife remarked, 'to get something in his pay-packet to pay the specialist with'. End result—an expenditure of 10 guineas when 3 would have achieved the same result.

It is experiences such as these which make the G.P. rather sceptical of the attitude of the 'specialists' and they prefer the 'consultant'.

There is another thing which is of importance, other things being equal; i.e. the personal factor, which is surely one of the fundamentals of the Art of Medicine, that is if it is to remain an art. It therefore devolves on the family doctor to advise his patient to go to the specialist whose personality is most likely to be compatible with that of the patient, so that a further link may be forged in the patient's faith in the profession.

CONCLUSION

To conclude these somewhat rambling thoughts engendered by the articles mentioned, there are two other points which cause me some concern—no, there are three points:

(*a*) The apparent callousness with which some present-day anaesthetists treat their patients. They seem to forget that the patient is a human being with human fears and failings and that at this time more than any other the patient feels helpless and alone and should therefore be treated as something more than an appendage at the end of the anaesthetist's tubes and needles. A little more bedside and tableside manner would be appreciated. I know one anaesthetist who will never again anaesthetize one of my patients if I can help it because of the way he treated my patient during an operation recently at which I happened to be present.

(*b*) The excessive use of blood transfusions. It appears to be the fashion to give blood on the slightest indication and often in quite unnecessary quantity. How often at the end of an operation has one heard the remark, 'The blood is here we might as well use it'. Is it forgotten that that pint of blood is a free gift on the part of the donor, who is surely entitled to feel that the blood he has given so generously is not wasted and that the gift he has expressly given to a fellow creature in need is not abused.

(*c*) I am horrified at the frequency with which women are 'spayed' on the slightest provocation. It seems to me an abuse and prostitution of the standards achieved by modern surgery that this operation should so often be performed without reference to the future of the patient. I know too many homes which have been broken up because of personality changes in the wife after such operations—so many of them for non-medical reasons—where the doctor's duty should be education and not evisceration.

1. Black, J. (1956): S. A. Med. J. **30**, 244.
2. Dale, E. W. S. (1956): S. A. Med. J. **30**, 247.

PASSING EVENTS : IN DIE VERBYGAAN

Dr. Ivor M. Shulman, B.A. (Cape Town), F.R.C.S. (Eng.), D.M.R.T. (Lond.), Radiotherapist, until recently chief assistant in the Sassoon-Mozelle Department of Radiotherapy and Radioactive Isotopes, St. Bartholomew's Hospital, London, has started practice at 611-612 Dumbarton House, Church Street, Cape Town. Telephones: rooms 2-8811, residence 69-8246.

Dr. Ivor M. Shulman, B.A. (Kaapstad), F.R.C.S. (Eng.), D.M.R.T. (Lond.), Radioterapeut, tot onlangs hoof-assistent aan die Sassoon-Mozelle Departement van Radioterapie en Radioaktiewe Isotope, St. Bartholomew-hospitaal, Londen, praktiseer nou te Dumbarton-huis, 611-612 Kerkstraat, Kaapstad. Telefone: spreekkamers 2-8811, woning 69-8246.

Union Department of Health Bulletin. Report for the 7 days ended 26 April 1956.

Plague. Orange Free State. No further cases have been reported from the Bothaville district since the notification in Bulletin No. 12 of 1956. This area is now regarded as free from infection.

Smallpox. Nil.

Typhus Fever. Cape Province. One (1) non-European case in the Cradock district. Diagnosis confirmed by laboratory test.

Epidemic Diseases in other Countries.

Plague in Moulmein (Burma).

Cholera in Calcutta (India); Chalna, Chittagong (Pakistan).

Smallpox in Rangoon (Burma); Ahmedabad, Allahabad, Bombay, Calcutta, Delhi, Madras (India); Basra (Iraq); Dacca, Karachi (Pakistan).

Typhus Fever in Baghdad (Iraq).

* * *

Dr. C. L. Wicht, M.Med. (Med. Int.) is tans besig met nagraadse studie in Leyden, Holland.

* * *

Dr. Deirdre Moore, obstetrician and gynaecologist, has commenced practice as a specialist at 503 Netherlands Bank Buildings, 85 St. George's Street, Cape Town. Telephones: rooms 3-4270, residence 69-8119.

Mr. Bertram L. Shaff, M.B., F.R.C.S. (Edin.), is joining Mr. J. Wolfowitz, M.B., F.R.C.S. (Edin.) in partnership practice as a surgeon at 308 Medical Centre, Jeppe Street, Johannesburg. Telephones: rooms 23-5311/2, residence (Mr. Wolfowitz) 42-6168 (Mr. Shaff) 41-2026.

* * *

Die jaarlikse dinee van die Tak Wes-Kaapland sal op Vrydag 15 Junie 1956 by die Arthur's Seat Hotel, Beachweg, Seepunt, gehou word. Kaartjies is verkrygbaar by die kantoor van die Tak, Mediese Huis, Waalstraat 35, Kaapstad (Posbus 643) teen 25s. elk. Alle dokters wat met besoek in die Skiereiland is word hartelik verwelkom.

* * *

Die jaarlikse dinee-dansparty van die Tak Noord-Transvaal van die Mediese Vereniging van Suid-Afrika sal in die Pretoria Country Club gehou word op 12 Mei 1956 om 8 nm. Dubbelkaartjies kos £2 2s. 0d. elk, en 'n buffetete sal van 8 tot 9.30 nm. bedien word.

* * *

Mr. S. Shulman, Orthopaedic Surgeon, has changed his Rooms to 903/4 Atkinson House, Strand Street, Cape Town. Telephones: Rooms, 2–3977, 3–1690.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

Dequadin Lozenges. Allen and Hanbury (Africa) Ltd., in announcing the introduction of Dequadin-decamethylene-bis (4-aminoquinaldinum chloride) state as follows:

Dequadin has a wide antimicrobial spectrum and inhibits, at low concentration, nearly all pathogenic bacteria. Dequadin lozenges are fungicidal as well as bacterial, and are effective in the treatment of oral thrush, including that due to prolonged antibiotic therapy. They are indicated in Vincent's angina, tonsillitis, sore throat, stomatitis, pyorrhoea, pharyngitis, aphthous ulcers, thrush and glossitis. Dequadin lozenges are non-toxic and are not harmful to children.

They are supplied in vials of 20 lozenges by Allen and Hanbury (Africa), Ltd., Durban.

* * *

Chloromycetin Aplicaps. P.D. & Co. (Pty.) Limited, the South African subsidiary of Parke, Davis & Company, announce the introduction of Chloromycetin Aplicaps, which are small, bottle-shaped, pliable, gelatin capsules with an elongated 'neck' through which Chloromycetin Ophthalmic Ointment, 1%, may be expressed for local application. They are designed to minimize the possibility of reinfection of the eye, which may result from the use of ophthalmic ointment in tubes. Supplied in bottles of 100.

REVIEWS OF BOOKS : BOEKRESENSIES

ORTHOPAEDICS

Essentials of Orthopaedics. By Philip Wiles, M.S. (Lond.), F.R.C.S. (Eng.), F.A.C.S. Second Edition. Pp. 538 + xv, with 393 illustrations. 55s. London: J. & A. Churchill Ltd. 1955.

Contents: 1. Postural Defects. 2. Back Pain. 3. The Spine. 4. The Hip. 5. The Knee. 6. The Foot and Ankle. 7. The Shoulder Girdle. 8. The Elbow. 9. The Wrist and Hand. 10. Pyogenic Infection. 11. Tuberculosis. 12. Chronic Arthritis. 13. Tumours of Bone. 14. Diseases and Congenital Defects of Bone. 15. Diseases of the Nervous System. Index.

The author writes: 'I have in mind primarily the needs of the general practitioner who has to advise the patient in the first instance, the undergraduate student who requires classified information to help him order his thoughts, and the postgraduate who is beginning his training. Treatment is described in detail when it can be carried out by a general practitioner. In other cases the available method of treatment and probable functional results are discussed, operative procedures being described only in general terms'.

This description clearly indicates the scope of the book and the place it is to occupy in the medical man's library. It is essentially a short complete text-book, covering the whole field of orthopaedics, and including all post-traumatic conditions, but not fractures.

As a reference book it is a little too short, but this may be an advantage to practitioners with limited time to spare, and it should prove valuable to students as early as their fourth year. Each condition described includes aetiology, diagnosis and treatment, and the latter is essentially practical and direct with a minimum of theorizing. It covers fully the requirements of the Orthopaedic section of any qualifying degree in surgery, and would also be a useful book for any practitioner whose orthopaedic volume has been on his shelf for 8 or 10 years.

Hj.R.

PSYCHIATRY

Psychological Medicine. A Short Introduction to Psychiatry. Fourth Edition. By Desmond Curran, M.B., F.R.C.P., D.P.M. and Maurice Partridge, M.A., D.M., D.P.M. Pp. 406 + viii with illustrations. 21s. 0d. Edinburgh & London: E. & S. Livingstone Ltd. 1955.

Contents: 1. Introductory. 2. The Aetiology of Mental Illness. 3. Symptoms Encountered in Mental Illness. 4. Psychiatric Case-Taking. 5. Constitutional Anomalies. 6. Organic Mental Syndromes. 7. Psychiatric Aspects of Head Injury. 8. Alcoholism and Drug Addiction. 9. Schizophrenia. 10. The Affective Disorders. 11. The Affective Disorders (continued). 12. Hysterical States. 13. Obsessional States. 14. Peripheral Psychiatry. 15. The Treatment of Mental Illness. 16. The Legal Aspects of Mental Illness. Bibliography. Index.

It is a pleasure to welcome the 4th edition of this text-book. During the 6 years that have elapsed since the 3rd edition appeared there have been advances in psychiatry that call for a certain re-orientation in our thinking about mental illness. New work has therefore been incorporated and, to make room for it, the old section on war psychiatry has been omitted.

The book is intended as an introduction to psychiatry and makes no pretention to be anything else. Despite this it has much to offer not only to medical students but to medical practitioners. The era when psychiatry was regarded with distaste or as something foreign to the rest of medical science has passed and it has been accepted as an integral and important part of general medicine. The broad general principles governing psychiatric diagnosis and practice are clearly and concisely defined. The authors plainly

dislike pompous polysyllables and communicate their meaning simply and clearly.

The section on etiology stresses the importance of multiple factors in the causation of mental illness and urges the sober assessment of constitutional, physical and psychological factors in all cases. Recent work in biochemistry, pharmacology and neurosurgery has raised a host of new etiological problems which have not as yet been properly assimilated into psychiatric theory. While giving some idea of the scope of this work the authors have retained some of the important contributions made by psychoanalysis. They give a short account of the general principles and techniques of analysis, though they are derisive about some of this school's more startling claims.

The clinical side is well done—the section on the affective disorders is full of useful information. Therapy is discussed in some detail. The authors have included with some reluctance a section on the technique of such forms of therapy as electroconvulsion, insulin coma and the apomorphine treatment of chronic alcoholism. Though interesting they are such specialized techniques that they are out of place in a book of this type. There is no defeatism about the authors' approach to patients. Labels like 'inadequate personality' are not flung around indiscriminately but a sincere attempt is made to help or at least comfort every patient.

F.A.

CONGENITAL HEART DISEASE

Diagnosis of Congenital Heart Disease. A Clinical and Technical Study by the Cardiologic Team of the Pediatric Clinic Karolinska Sjukhuset, Stockholme. Pp. 649 + xv with 581 illustrations. Chicago: The Year Book Publishers, Inc. 1955.

Contents: 1. Embryologic Survey. 2. Roentgenologic Anatomy and Physiology of the Heart. 3. Technique. 4. Complications in Catheterization and Angiocardiography. 5. Case Material. 6. Pulmonary Stenosis with Normal Aortic Root. 7. Tetralogy of Fallot. 8. Persistent Truncus Arteriosus. 9. Ventricular Septal Defect. 10. Atrial Septal Defect. 11. Persistent Ostium Atrioventriculare Commune. 12. Anomalous Drainage of Pulmonary Veins. 13. Patent Ductus Arteriosus. 14. Aortic Sinus Aneurysm. 15. Coarctation of the Aorta. 16. Vascular Ring. 17. Valvular and Subvalvular Aortic Stenosis. 18. Pulmonary Incompetence. 19. Ebstein's Malformation of the Tricuspid Valve. 20. Tricuspid Atresia. 21. Tricuspid Stenosis. 22. Mitral Atresia. 23. Mitral Stenosis. 24. Mitral Incompetence. 25. Transposition of the Great Vessels. 26. Primary Pulmonary Hypertension. 27. 'Idiopathic' Dilatation of the Pulmonary Artery. Bibliography. Index.

It is some time now since it was considered adequate merely to recognize the presence of a congenital cardiac lesion. With the advances in cardiac surgery it becomes essential to recognize those cases which are likely te benefit from this approach and accurate anatomical diagnosis becomes imperative. Information gathered from catheterization, angiography and other sources has drawn attention to and elucidated certain physical signs, making it possible, in a large proportion of cases, to make an accurate clinical assessment at the bedside.

This volume presents a correlative study of 396 cases of congenital heart-disease observed between the years 1951 and 1954. The patients were almost entirely children.

After chapters dealing with embryology, anatomy, physiology and special diagnostic techniques, chapters follow on individual congenital lesions. The chapter on embryology, while not detailed, forms an adequate basis for the understanding of what is to follow. The text dealing with catheterization is essentially practical and reflects a mastery of this procedure which can only come with considerable experience. The description is simple enough to be understood by the uninitiated yet so informative as to serve as a constant source of reference to the expert. The chapters dealing with the actual lesions are discussed from the point of view of anatomy, clinical features, electrocardiography, X-ray appearances, electrokymography, cardiac catheterization and angiography. While the chapters are subdivided under these various headings, the discussion integrates the various methods and gives meaning to the clinical signs, enabling a diagnosis to be made at the bedside in a large proportion of the cases.

While the presentation is essentially that of personal experience the literature is not ignored and there are 387 references included to work done at our cardiac clinic in Cape Town.

The text is profusely illustrated by well-indexed photographs of anatomical specimens, X-rays and angiographs. The reproductions are superlative.

This is an excellent volume which is a must for all those interested in heart disease. It is eminently readable; the style and method of presentation permit of understanding by the uninitiated and yet constitute a source of pleasure and constant reference to the specialist in this department of medicine.

Both the authors and publishers are to be heartily congratulated.

I.G.

HAND INJURIES

Manuel of Hand Injuries. By H. Minor Nichols, M.D. (Pp. 352 with 180 illustrations. $9·50) Chicago: The Year Book Publishers, Inc. 1955.

Contents: 1. Anatomy. 2. General Technic; Pre- and Post-operative Care. 3. Minor Injuries. 4. Amputations. 5. Burns. 6. Skin Grafting. 7. Avulsions of Skin: Primary Flap Grafts. 8. Tendon and Muscle Injuries. 9. Nerve Injuries. 10. Fractures and Dislocations. 11. Infections. 12. Secondary Tendon Repairs: Tendon Grafting. 13. Elective and Reconstructive Procedures. Index.

In this era of automation, hand injuries are among the more common conditions treated by the G.P. and surgeon. Lack of knowledge of correct and adequate management carries a high risk of permanent disability. Bunnell's 'autraumatic technique', an aseptic conscience, and patient skill are essential in the acute injuries, and the final result often necessitates the collaboration of the plastic and the orthopaedic surgeon. The importance of the knowledge of the minute details of the anatomy of the hand is emphasized by Dr. Nichols who devotes more than 10% of his book to a clear exposition of the 'geography' of the hand. It is only a pity that the anatomical nomenclature is not as modern as the rest of the book, e.g. the use of 'greater multangular' for 'os trapezium', 'deep volar arch' for 'deep palmar arch' (arcus palmaris profundus). The author has drawn on an extensive personal experience to present valuable notes on techniques of local and regional anaesthesia, pre- and post-operative care, and he has presented only these methods of treatment which he has found successful. The techniques of skin grafting and the use of pedunculated flaps are described and illustrated. The text is concise and clear, and the type, diagrams and photographs are a credit to the Year Book Publishers. This is a complete textbook of all types of hand lesions for the student, the intern, the G.P. and the surgeon, and is worth every cent of its price.

R.S.

CORRESPONDENCE : BRIEWERUBRIEK

EMERGENCIES IN PRIVATE NURSING HOMES

To the Editor: One has experienced recently a sense of shame in that human lives have been lost unnecessarily. Private nursing homes and maternity homes do not have resident medical officers, and in consequence thereof emergencies when they arise are very soon tragedies, because the attending doctors cannot be found or cannot institute treatment in time.

I have personal knowledge of 3 deaths in private nursing homes, to my mind, unnecessary. The first was a child of 5 who died from haemorrhage after tonsillectomy. The second was a man who bled after prostatectomy. The third was an elderly woman, a cardiac patient with pneumonia, who was taken by car into town for X-rays.

Are such deaths avoidable? Of course they are. These homes should be compelled to provide a permanent full-time medical officer and all necessary equipment. Paying patients will not object to an increase in tariff to cover the salary of the medical officer under these circumstances.

Let us search our hearts and act before more tragedies occur.

Sydney Kavalsky

'Avoca'
Main Road
Wynberg, C.P.
30 April 1956